

10/524,825 /BAC/

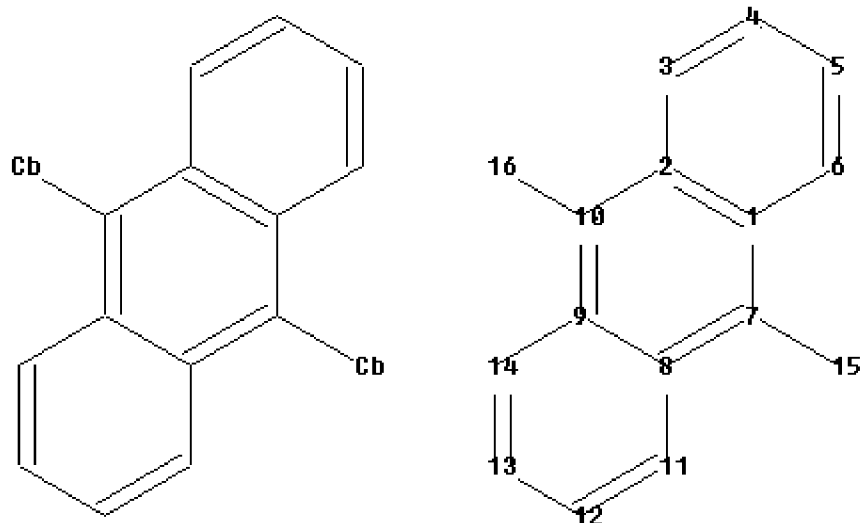
=> file reg

FILE 'REGISTRY' ENTERED AT 13:37:40 ON 27 JUN 2010

=>

Uploading C:\Program

Files\Stnexp\Queries\10524825\_anthracene\_asymmetric\_20100627.str



chain nodes :

15 16

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14

chain bonds :

7-15 10-16

ring bonds :

1-2 1-6 1-7 2-3 2-10 3-4 4-5 5-6 7-8 8-9 8-11 9-10 9-14 11-12 12-13  
13-14

exact bonds :

7-15 10-16

normalized bonds :

1-2 1-6 1-7 2-3 2-10 3-4 4-5 5-6 7-8 8-9 8-11 9-10 9-14 11-12 12-13  
13-14

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom

11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom

Generic attributes :

15:

Saturation : Unsaturated

Number of Carbon Atoms : less than 7

Type of Ring System : Monocyclic

16:

Saturation : Unsaturated

Number of Carbon Atoms : 7 or more

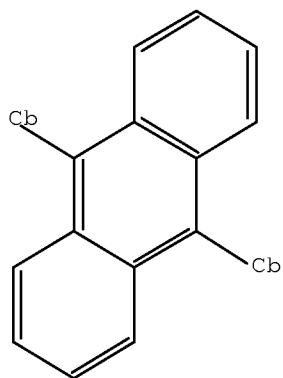
Type of Ring System : Polycyclic

L1            STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1                    STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss sam

SAMPLE SEARCH INITIATED 13:37:57

SAMPLE SCREEN SEARCH COMPLETED -        29385 TO ITERATE

6.8% PROCESSED        2000 ITERATIONS

14 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:    ONLINE    \*\*COMPLETE\*\*

BATCH        \*\*COMPLETE\*\*

PROJECTED ITERATIONS:        577441 TO        597959

PROJECTED ANSWERS:                3253 TO        4973

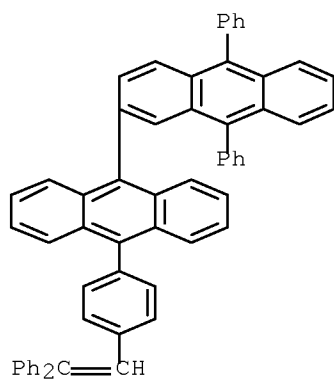
L2                    14 SEA SSS SAM L1

=> d scan

L2    14 ANSWERS    REGISTRY    COPYRIGHT 2010 ACS on STN

IN    2,9'-Bianthracene, 10'-[4-(2,2-diphenylethenyl)phenyl]-9,10-diphenyl-

MF    C60 H40

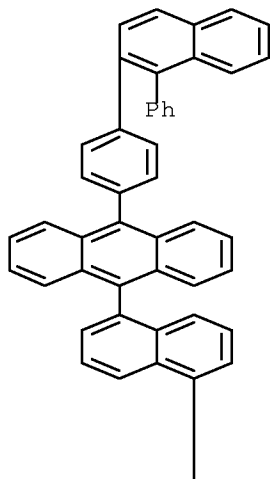


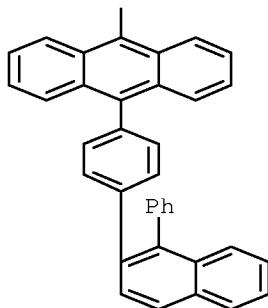
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):13

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Anthracene, 9,9'-(1,5-naphthalenediyl)bis[10-[4-(1-phenyl-2-  
 naphthalenyl)phenyl]-  
 MF C82 H52

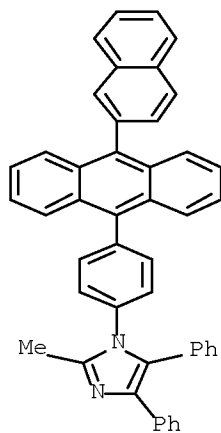
PAGE 1-A





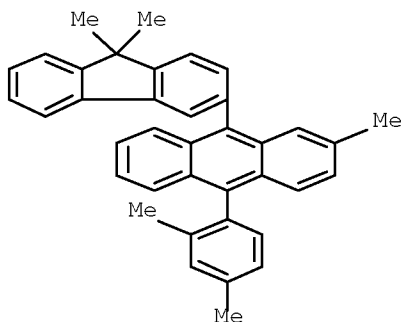
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN 1H-Imidazole, 2-methyl-1-[4-[10-(2-naphthalenyl)-9-anthracenyl]phenyl]-4,5-  
 diphenyl-  
 MF C46 H32 N2



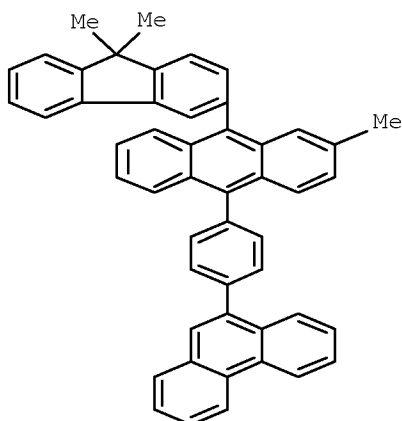
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Anthracene, 9-(9,9-dimethyl-9H-fluoren-3-yl)-10-(2,4-dimethylphenyl)-2-  
 methyl-  
 MF C38 H32



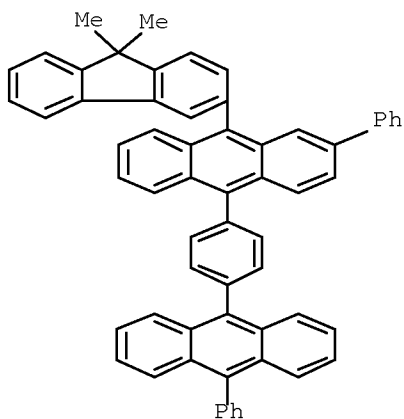
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Anthracene, 9-(9,9-dimethyl-9H-fluoren-3-yl)-2-methyl-10-[4-(9-phenanthrenyl)phenyl]-  
 MF C50 H36



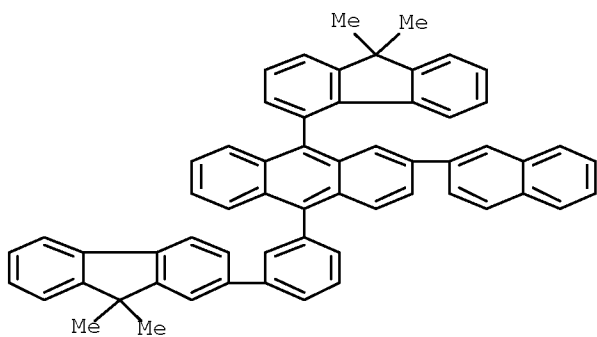
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
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 MF C61 H42



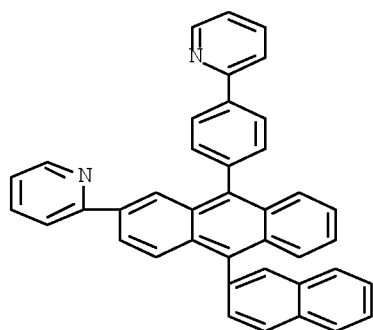
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Anthracene, 9-(9,9-dimethyl-9H-fluoren-4-yl)-10-[3-(9,9-dimethyl-9H-  
 fluoren-2-yl)phenyl]-2-(2-naphthalenyl)-  
 MF C60 H44



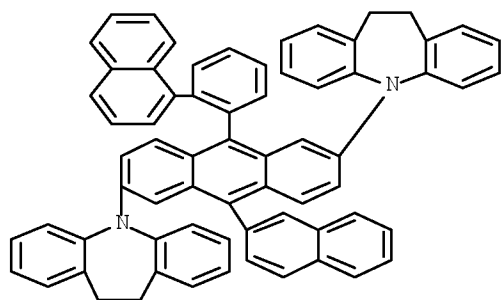
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Pyridine, 2-[4-[10-(2-naphthalenyl)-2-(2-pyridinyl)-9-anthracenyl]phenyl]-  
 MF C40 H26 N2

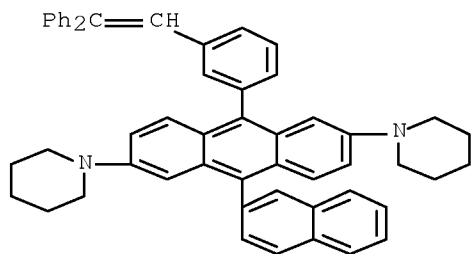


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN INDEX NAME NOT YET ASSIGNED  
 MF C68 H48 N2

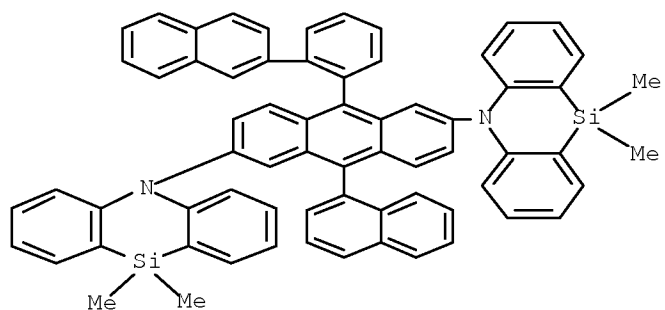


L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN INDEX NAME NOT YET ASSIGNED  
 MF C54 H48 N2



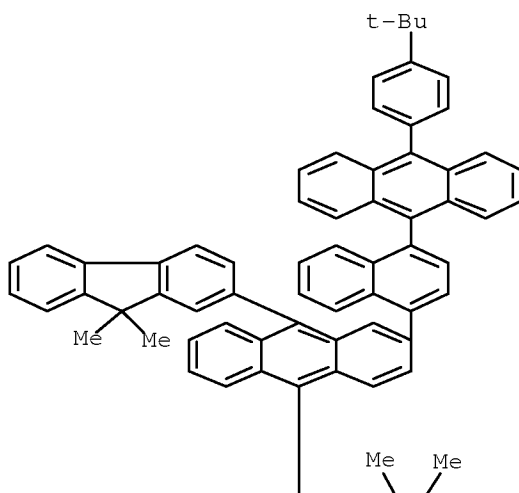
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
IN INDEX NAME NOT YET ASSIGNED  
MF C68 H52 N2 Si2



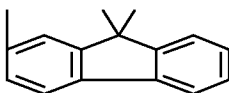
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
IN Anthracene, 2-[4-[10-[4-(1,1-dimethylethyl)phenyl]-9-anthracenyl]-1-naphthalenyl]-9,10-bis(9,9-dimethyl-9H-fluoren-2-yl)-  
MF C78 H60



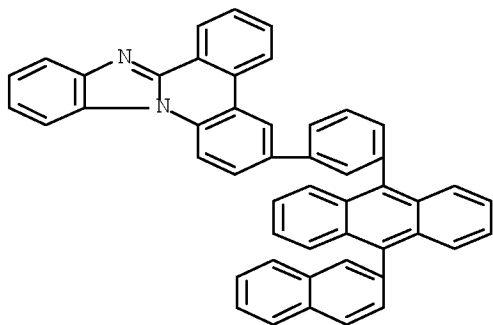
PAGE 1-A





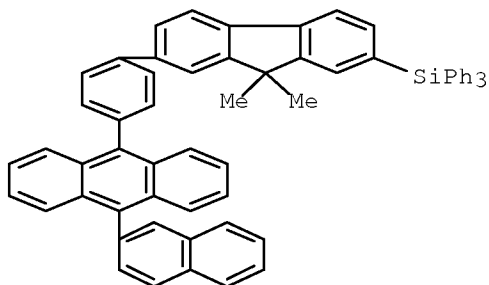
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Benzimidazo[1,2-f]phenanthridine, 3-[3-[10-(2-naphthalenyl)-9-anthracenyl]phenyl]-  
 MF C49 H30 N2



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L2 14 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN  
 IN Anthracene, 9-[4-[9,9-dimethyl-7-(triphenylsilyl)-9H-fluoren-2-yl]phenyl]-10-(2-naphthalenyl)-  
 MF C63 H46 Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

ALL ANSWERS HAVE BEEN SCANNED

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FULL SEARCH INITIATED 13:41:26
FULL SCREEN SEARCH COMPLETED - 588832 TO ITERATE
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100.0% PROCESSED 588832 ITERATIONS 3453 ANSWERS
SEARCH TIME: 00.00.13
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L3 3453 SEA SSS FUL L1
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L4 517 L3
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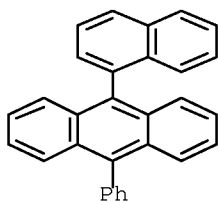
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(PD<20020823)
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(AD<20020823)
L6 65 L4 AND (PD<20020823 OR AD<20020823)
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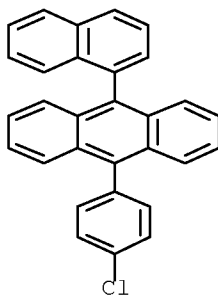
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L6 ANSWER 1 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2008:1383593 HCAPLUS Full-text
DN 149:555099
TI The retro-Diels-Alder reaction. Part II. Dienophiles with one or more
heteroatom
AU Rickborn, Bruce
```

CS University of California, Santa Barbara, CA, USA  
 SO Organic Reactions (Hoboken, NJ, United States) (1998), 53, No  
 pp. given  
 CODEN: ORHNBA  
 URL: <http://www3.interscience.wiley.com/cgi-bin/mrwhome/107610747/HOME>  
 PB John Wiley & Sons, Inc.  
 DT Journal; General Review; (online computer file)  
 LA English  
 OS CASREACT 149:555099  
 AB A review of the article The retro-Diels-Alder reaction. Part II. Dienophiles  
 with one or more heteroatom.  
 IT 63018-93-9P 1071026-68-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (The Retro-Diels-Alder Reaction Part II. Dienophiles with One or More  
 Heteroatom)  
 IT 63018-93-9P 1071026-68-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (The Retro-Diels-Alder Reaction Part II. Dienophiles with One or More  
 Heteroatom)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



RN 1071026-68-0 HCAPLUS  
 CN Anthracene, 9-(4-chlorophenyl)-10-(1-naphthalenyl)- (CA INDEX NAME)



L6 ANSWER 2 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2004:399307 HCAPLUS Full-text  
 DN 142:186145  
 TI Organic electroluminescence device  
 IN Xie, Shuang  
 PA Xie Shuang, Peop. Rep. China

SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 40 pp.

CODEN: CNXXEV

DT Patent

LA Chinese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1395454	A	20030205	CN 2002-120837	20020605 <--
	CN 1192684	C	20050309		
PRAI	CN 2002-120837		20020605		

AB The present invention relates to an organic electroluminescent device which comprises an anode, a cathode, and an organic medium layer between the anode and the cathode. The organic medium layer consists of a cavity implantation and transmission layer, a luminescent layer, and an electron implantation and transmission layer. The luminescent layer is anthracene derivative (I), where: R1, R2, R3, and/or R4 = H, C1-16 alkyl or alkoxy, linear alkenyl, C6-24 aryl, C5-24 aromatic heterocyclic group, amino, alkylamino, arylamino, dialkylamino, diarylamino, cyano, C1-8 perfluoroalkyl, Cl, Br, or F; R5 = C1-16 alkyl or perfluoroalkyl, C6-24 aryl, C5-24 aromatic heterocyclic group, cyano, Cl, Br, or F; and X = methylene, dialkylmethylene, diarylmethylene, O, S, alkylimino, arylimino, dialkylsilylene, or diarylsilylene and/or coumarin derivative (II), where: R = H, C1-24 alkyl, aryl, aromatic heterocyclic group, or cyclic group; R1, R2, R3, R4, R5, R6, R7, R8, and/or R9 = C1-20 alkyl, aryl, or cyclic group; EDG = H, C1-24 alkyl, C5-24 aryl, OR10, R11(R12)N; R10, R11, and/or R12 = C1-20 alkyl, aryl, or cyclic group; and R11 + R1, R11 + R12, or R12 + R2 = a cyclic group as dopant. The electron implantation and transmission layer is a heterocyclic group-containing anthracene derivative (III) where: R1, R2, R3, R4, and/or R5 = H, C1-16 alkyl or alkoxy, C6-26 aryl, or C5-24 aromatic heterocyclic group; X = methylene, dialkylmethylene, diarylmethylene, S, O, or NR; and R = H, C1-16 alkyl or alkoxy, or C6-24 aryl. The organic electroluminescence device may be used to manufacture display device. Some coumarin derivs. were synthesized and the organic electroluminescence device was manufactured

IT 626236-30-4

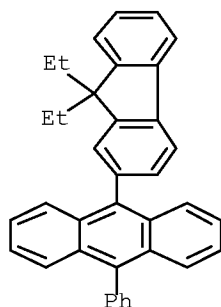
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescence device containing)

IT 626236-30-4

RL: DEV (Device component use); USES (Uses)  
(organic electroluminescence device containing)

RN 626236-30-4 HCAPLUS

CN Anthracene, 9-(9,9-diethyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



AN 2004:201021 HCAPLUS Full-text  
DN 140:261163  
TI Top emission organic EL device  
IN Yasukawa, Hiroshi; Takizawa, Masatoshi; Arai, Michio  
PA TDK Corporation, Japan  
SO Jpn. Kokai Tokkyo Koho, 21 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2004079421	A	20040311	JP 2002-240751	20020821 <--
PRAI	JP 2002-240751		20020821		

AB In a top emission organic EL device, especially a device which emits white light by combining lights from  $\geq 2$  emissive layers, interference of lights from a reflective layer with visible light reflectance  $\geq 50\%$  and light(s) from the emissive layer(s) has been avoided by optimizing thicknesses of constituting layers or by optimizing thicknesses and refractive indexes of constituting layers.

IT 172285-83-5

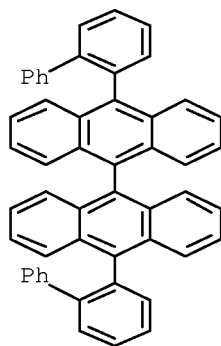
RL: DEV (Device component use); USES (Uses)  
(lower luminescent species; top emission organic EL device)

IT 172285-83-5

RL: DEV (Device component use); USES (Uses)  
(lower luminescent species; top emission organic EL device)

RN 172285-83-5 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



L6 ANSWER 4 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2004:157685 HCAPLUS Full-text

DN 140:225494

TI Anthracenes as electroluminescent substances for organic electroluminescent devices

IN Ikeda, Shuji; Ido, Motohisa; Funabashi, Masakazu; Shoji, Hiroshi

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 26 pp.

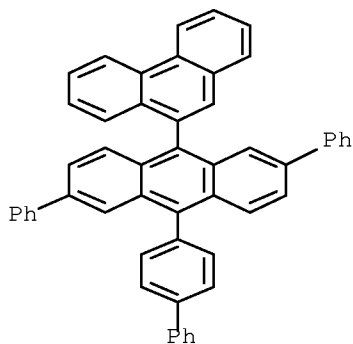
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004059535	A	20040226	JP 2002-222990	20020731 <--
	JP 4025136	B2	20071219		
PRAI	JP 2002-222990		20020731		
OS	MARPAT 140:225494				
AB	The anthracenes are I (X = halo, OH, NO <sub>2</sub> , cyano, C1-50 alkyl, aryl having 6-50 nucleus C atoms, C5-50 cycloalkyl, etc.; ≥2 of Z are aryl having 6-50 nucleus C atoms, C5-50 cycloalkyl, etc.; Ar = polycyclic aryl having 10-50 nucleus C atoms; Ar1 = aryl having 6-50 nucleus C atoms; a, b = 0-4; a ≠ b ≠ 0; n = 1-3). Organic electroluminescent devices including emitter, electron transport, and/or hole transport layers show high luminescence intensity and efficiency at low voltage.				
IT	660427-98-5P RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) (anthracenes as electroluminescent substances in emitter, electron transport, and/or hole transport layers for organic electroluminescent devices)				
IT	660427-98-5P RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses) (anthracenes as electroluminescent substances in emitter, electron transport, and/or hole transport layers for organic electroluminescent devices)				
RN	660427-98-5	HCAPLUS			
CN	Anthracene, 9-[1,1'-biphenyl]-4-yl-10-(9-phenanthrenyl)-2,6-diphenyl- (CA INDEX NAME)				



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L6 ANSWER 5 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
AN 2004:120810 HCAPLUS Full-text  
DN 140:171953  
TI Anthracene derivatives for organic electroluminescent devices  
IN Ido, Motohisa; Funahashi, Masakazu; Tokairin, Hiroshi  
PA Idemitsu Kosan Co., Ltd., Japan  
SO PCT Int. Appl., 54 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004013073	A1	20040212	WO 2003-JP9606	20030729
	W: CN, IN, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	JP 2004067528	A	20040304	JP 2002-225636	20020802 <--
	JP 4025137	B2	20071219		
	EP 1533289	A1	20050525	EP 2003-766655	20030729
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	CN 1675148	A	20050928	CN 2003-818561	20030729
	CN 1971971	A	20070530	CN 2006-10163510	20030729
	CN 101311149	A	20081126	CN 2008-10099890	20030729
	US 20050233165	A1	20051020	US 2004-519934	20041229
	IN 2004CN03120	A	20060217	IN 2004-CN3120	20041231
	US 20090321729	A1	20091231	US 2009-585067	20090902
PRAI	JP 2002-225636	A	20020802		
	CN 2003-818561	A3	20030729		
	WO 2003-JP9606	W	20030729		
	US 2004-519934	B1	20041229		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 140:171953

AB The invention relates to an organic electroluminescent device comprising the anthracene derivs. represented by I [ Ar = II [L1 and L2 = methylene, ethylene, etc.]; Ar' = C6-50 aryl; X = alkyl etc.; a and b = 0-4 integer; n =1-3 integer]. The anthracene derivs. are characterized by the absence of crystallization and thermal decomposition in vapor deposition and by the high quantum efficiency even at high temperature

IT 654646-17-0P

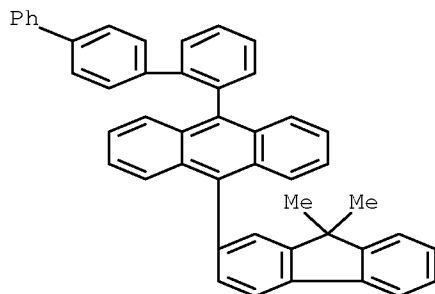
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(anthracene derivs. for organic electroluminescent devices)

IT 654646-17-0P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(anthracene derivs. for organic electroluminescent devices)

RN 654646-17-0 HCAPLUS

CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-[1,1':4',1''-terphenyl]-2-yl- (9CI) (CA INDEX NAME)



OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)  
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 6 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2004:118629 HCAPLUS Full-text

DN 140:172298

TI Organic electroluminescent elements with improved brightness and durability and displays using them

IN Yamada, Taketoshi; Kita, Hiroshi

PA Konica Minolta Holdings Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2004047329	A	20040212	JP 2002-204254	20020712 <--
PRAI	JP 2002-204254		20020712		
OS	MARPAT 140:172298				

AB The elements contain I (R1,2 = substituent; m, n = 1-4; R3-14 = H, substituent), preferably in electron-transfer layers or light-emitting layers. The light-emitting layers preferably contain I as hosts and phosphors selected from Ir, Os, or Pt compds.

IT 655243-42-8

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(light-emitting layer; cyclophane-based organic EL elements with improved brightness and durability for displays)

IT 655243-42-8

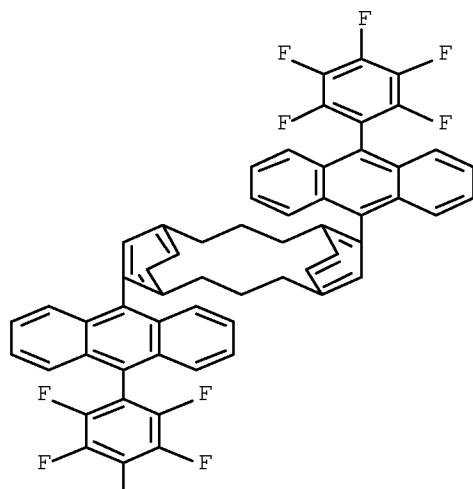
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(light-emitting layer; cyclophane-based organic EL elements with improved brightness and durability for displays)

RN 655243-42-8 HCAPLUS

CN Tricyclo[10.2.2.25,8]octadeca-5,6,7,12,14,15-hexaene,  
6,13-bis[10-(2,3,4,5,6-pentafluorophenyl)-9-anthracenyl]- (CA INDEX NAME)

PAGE 1-A





F

L6 ANSWER 7 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2004:117590 HCAPLUS Full-text

DN 140:154552

TI Optical recording medium for blue light-emitting semiconductor laser

IN Ishida, Tsutomu; Saito, Yasunori; Shiozaki, Hiroyuki; Ogiso, Akira;  
Tsukahara, Hiroshi; Shimamura, Takehiko; Tanabe, Yoshimitsu; Totani,  
Yoshiyuki; Nakatsuka, Masakatsu

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 81 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2004042485	A	20040212	JP 2002-204170	20020712 <--
PRAI	JP 2002-204170		20020712		
OS	MARPAT 140:154552				

AB The recording medium has  $\geq 1$  layer containing  $\geq 1$  hydrocarbon directly linked with fluorenes and condensed polycyclic aromatic ring. The medium is capable of recording and regenerating of information under 300-500 nm laser, e.g., blue-violet GaN laser diode. The hydrocarbons themselves are also claimed.

IT 400605-76-7 400605-92-7 400606-62-4  
626236-30-4 653590-83-1 653599-52-1

RL: TEM (Technical or engineered material use); USES (Uses)

(optical recording medium containing fluorene-linked condensed polycyclic aromatic hydrocarbon for blue semiconductor laser)

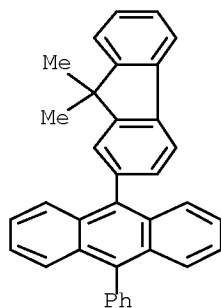
IT 400605-76-7 400605-92-7 400606-62-4  
626236-30-4 653590-83-1 653599-52-1

RL: TEM (Technical or engineered material use); USES (Uses)

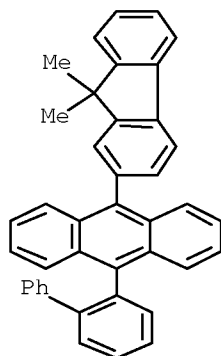
(optical recording medium containing fluorene-linked condensed polycyclic aromatic hydrocarbon for blue semiconductor laser)

RN 400605-76-7 HCAPLUS

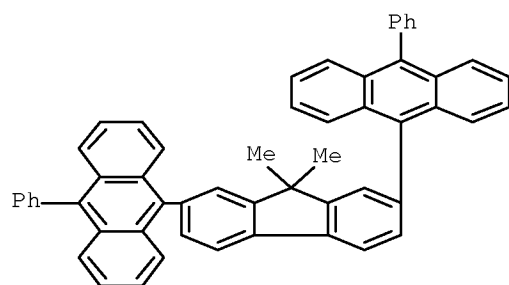
CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



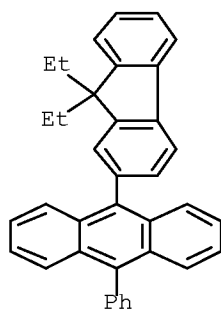
RN 400605-92-7 HCAPLUS  
 CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-(9,9-dimethyl-9H-fluoren-2-yl)- (CA  
 INDEX NAME)



RN 400606-62-4 HCAPLUS  
 CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-phenyl]- (CA  
 INDEX NAME)

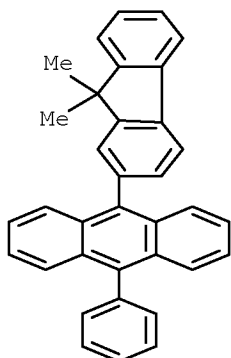


RN 626236-30-4 HCAPLUS  
 CN Anthracene, 9-(9,9-diethyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



RN 653590-83-1 HCAPLUS

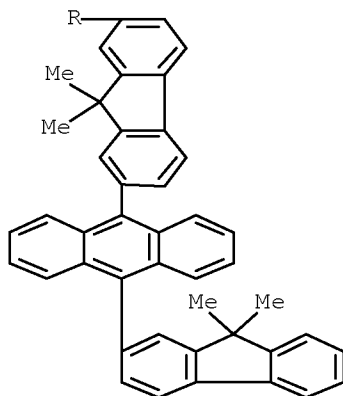
CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-[4-[2-(2-methoxyethoxy)ethoxy]phenyl]- (CA INDEX NAME)



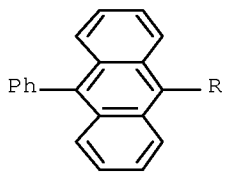
MeO—CH<sub>2</sub>—CH<sub>2</sub>—O—CH<sub>2</sub>—CH<sub>2</sub>—O

RN 653599-52-1 HCAPLUS

CN Anthracene, 9-[7-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]-10-phenyl- (CA INDEX NAME)



PAGE 1-A



PAGE 2-A

L6 ANSWER 8 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2003:912665 HCAPLUS Full-text  
 DN 139:401353  
 TI Electroluminescent devices  
 IN Xie, Shuang  
 PA Can.  
 SO U.S. Pat. Appl. Publ., 32 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 20030215667	A1	20031120	US 2001-985204	20011102 <--
PRAI	US 2001-985204		20011102		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 139:401353

AB Organic electroluminescent devices are described which are provided with active layers comprising a host based on  $\geq 1$  anthracene derivative doped with  $\geq 1$  anthracene derivative and/or coumarin derivative and/or an electron injecting/transporting layer comprising a diphenylanthracene derivative with benzazole derivs. attached to the Ph groups. Application to displays is indicated.

IT 626236-30-4P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(organic electroluminescent devices with anthracene derivative-based active layers and/or benzazole-group containing anthracene derivative electron-transport layers)

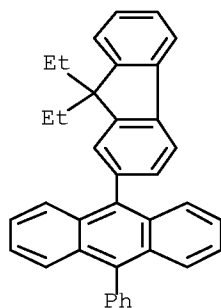
IT 626236-30-4P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(organic electroluminescent devices with anthracene derivative-based active layers and/or benzazole-group containing anthracene derivative electron-transport layers)

RN 626236-30-4 HCAPLUS

CN Anthracene, 9-(9,9-diethyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L6 ANSWER 9 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2003:837017 HCAPLUS Full-text  
 DN 139:330127

TI Novel aromatic compound for organic electroluminescent device  
 IN Ikeda, Hidetsugu; Matsuura, Masahide; Funahashi, Masakazu; Hosokawa, Chishio  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO PCT Int. Appl., 69 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003087023	A1	20031023	WO 2003-JP4905	20030417
	W: CN, IN, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	JP 2003306454	A	20031028	JP 2002-114400	20020417 <--
	JP 4170655	B2	20081022		
	EP 1496041	A1	20050112	EP 2003-723137	20030417
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK				
	CN 1646456	A	20050727	CN 2003-808545	20030417
	CN 100475759	C	20090408		
	CN 1876610	A	20061213	CN 2006-10092401	20030417
	CN 1939884	A	20070404	CN 2006-10159844	20030417
	IN 2004CN02317	A	20070803	IN 2004-CN2317	20041013
	US 20050214565	A1	20050929	US 2005-508602	20050316
PRAI	JP 2002-114400	A	20020417		
	CN 2003-808545	A3	20030417		
	WO 2003-JP4905	W	20030417		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 139:330127

AB The invention refers to a novel aromatic compound comprising a anthracene skeleton and an asym. mol. structure A-Ar-B [Ar = (un)substituted anthracenediyl; B = alkenyl- or arylamine-monosubstituted C2-60 heterocycle or (un)substituted C5-60 aryl; A = I, II, III, IV, V, VI, VII, VIII, IX, X, IX; Ar1-3 = (un)substituted C6-30 aryl; Ar4 = (un)substituted C6-30 arylene; Ar5 = (un)substituted C6-30 trivalent aromatic; R1,2 - H, halo, hydroxyl, (un)substituted amino, nitro cyano (un)substituted C1-30 alkyl, C2-40 alkenyl, C5-40 cycloalkyl, C1-30 alkoxy, C5-40 aromatic hydrocarbon, C2-40 aromatic heterocycle, C7-40 aralkyl, C6-40 aryloxy, C2-30 silyl or carboxyl; Ar1,2 and R1,2 may each join together to form rings].

IT 614734-92-8 614734-93-9

RL: DEV (Device component use); USES (Uses)  
 (novel aromatic compound for organic electroluminescent device)

IT 614734-94-0P 614735-11-4P

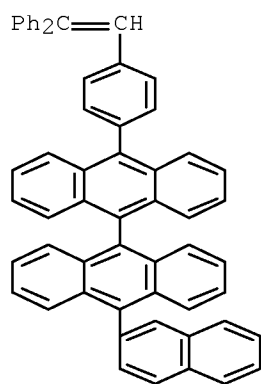
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (novel aromatic compound for organic electroluminescent device)

IT 614734-92-8 614734-93-9

RL: DEV (Device component use); USES (Uses)  
 (novel aromatic compound for organic electroluminescent device)

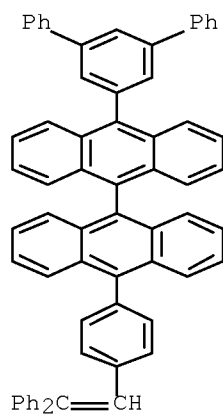
RN 614734-92-8 HCAPLUS

CN 9,9'-Bianthracene, 10-[4-(2,2-diphenylethenyl)phenyl]-10'-(2-naphthalenyl)-  
 (CA INDEX NAME)



RN 614734-93-9 HCAPLUS

CN 9,9'-Bianthracene, 10-[4-(2,2-diphenylethenyl)phenyl]-10'-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)

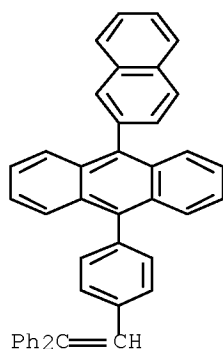


IT ~~614734-94-0P~~ 614735-11-4P

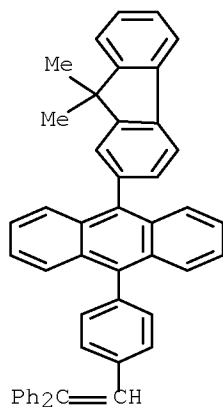
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(novel aromatic compound for organic electroluminescent device)

RN 614734-94-0 HCAPLUS

CN Anthracene, 9-[4-(2,2-diphenylethenyl)phenyl]-10-(2-naphthalenyl)- (CA INDEX NAME)



RN 614735-11-4 HCAPLUS  
 CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-[4-(2,2-diphenylethenyl)phenyl]- (CA INDEX NAME)



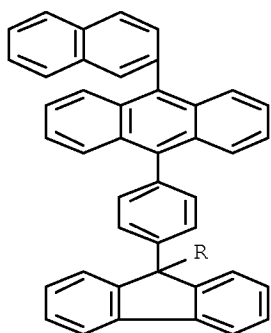
OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)  
 RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 10 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2003:723685 HCAPLUS Full-text  
 DN 139:252299  
 TI Diphenylfluorene derivatives and organic electroluminescence devices using them with high luminescence efficiency  
 IN Ishida, Tsutomu; Shimamura, Takehiko; Tanabe, Yoshimitsu; Totani, Yoshiyuki; Nakatsuka, Masakatsu  
 PA Mitsui Chemicals Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 40 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

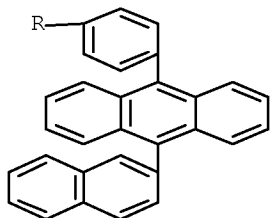
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003261472	A	20030916	JP 2002-62101	20020307 <--

PRAI JP 2002-62101 20020307  
 OS MARPAT 139:252299  
 AB The electroluminescence devices contain the diphenylfluorene derivs. I (Ar = anthryl; Z1-3 = H, halo, alkyl, alkoxy, aryl, aralkyl) between a pair of electrodes. The electroluminescence devices may further contain luminescent organic metal complexes and triarylamines.  
 IT 597554-17-1P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)  
 IT 597554-17-1P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (anthrylphenylphenylfluorene derivs. for organic EL devices with high luminescence efficiency)  
 RN 597554-17-1 HCAPLUS  
 CN Anthracene, 9,9'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[10-(2-naphthalenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L6 ANSWER 11 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2003:628443 HCAPLUS Full-text  
 DN 139:171119  
 TI Organic electroluminescent device comprising coupled anthracene fluorene



derivative and with amino-substituted hydrocarbon  
 IN Totani, Yoshiyuki; Ishida, Tsutomu; Shimamura, Takehiko; Tanabe,  
 Yoshimitsu; Nakatsuka, Masakatsu  
 PA Mitsui Chemicals Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 122 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2003229273	A	20030815	JP 2002-25736	20020201 <--
	JP 4080213	B2	20080423		
PRAI	JP 2002-25736		20020201		

OS MARPAT 139:171119

AB The invention refers to an organic electroluminescent device comprising one or two fluorene rings directed bonded to an anthracene and a amino-substituted hydrocarbon.

IT ~~400605-92-7~~ ~~400605-99-4~~ ~~400606-62-4~~  
~~400606-71-5~~ ~~400606-72-6~~ ~~577795-76-7~~  
~~577795-80-3~~ ~~577795-81-4~~

RL: DEV (Device component use); USES (Uses)

(compsds. with fluorenes; organic electroluminescent device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon)

IT ~~400606-21-5~~ ~~400606-87-3~~ ~~577795-82-5~~  
~~577795-83-6~~ ~~577795-85-8~~

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon)

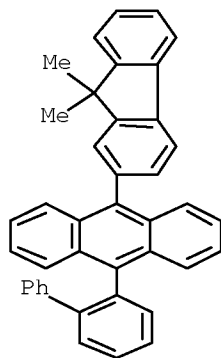
IT ~~400605-92-7~~ ~~400605-99-4~~ ~~400606-62-4~~  
~~400606-71-5~~ ~~400606-72-6~~ ~~577795-76-7~~  
~~577795-80-3~~ ~~577795-81-4~~

RL: DEV (Device component use); USES (Uses)

(compsds. with fluorenes; organic electroluminescent device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon)

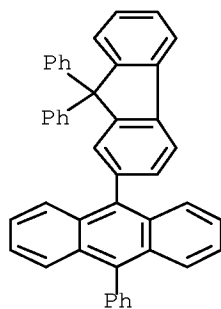
RN 400605-92-7 HCAPLUS

CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



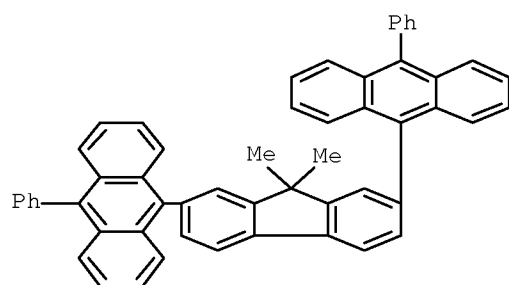
RN 400605-99-4 HCAPLUS

CN Anthracene, 9-(9,9-diphenyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



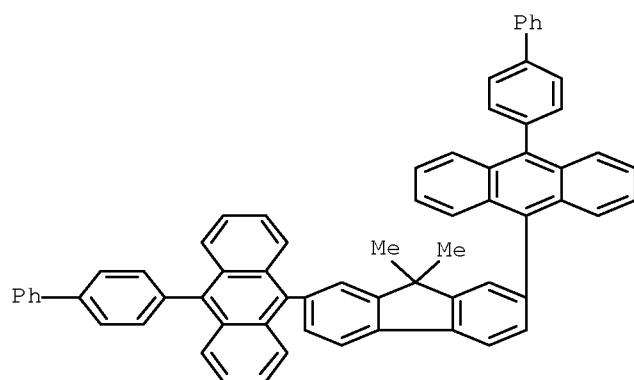
RN 400606-62-4 HCAPLUS

CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-phenyl- (CA INDEX NAME)



RN 400606-71-5 HCAPLUS

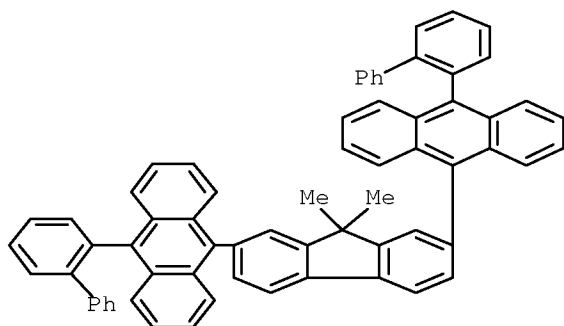
CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[1,1'-biphenyl]-4-yl- (CA INDEX NAME)



RN 400606-72-6 HCAPLUS

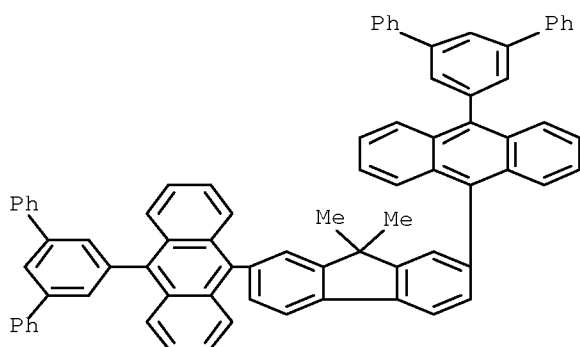
CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[1,1'-biphenyl]-

2-yl- (CA INDEX NAME)



RN 577795-76-7 HCAPLUS

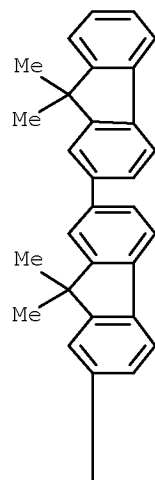
CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)



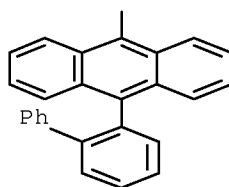
RN 577795-80-3 HCAPLUS

CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl)- (CA INDEX NAME)

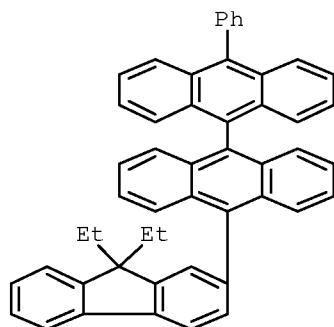
PAGE 1-A



PAGE 2-A



RN 577795-81-4 HCAPLUS  
 CN 9,9'-Bianthracene, 10-(9,9-diethyl-9H-fluoren-2-yl)-10'-phenyl- (CA INDEX NAME)

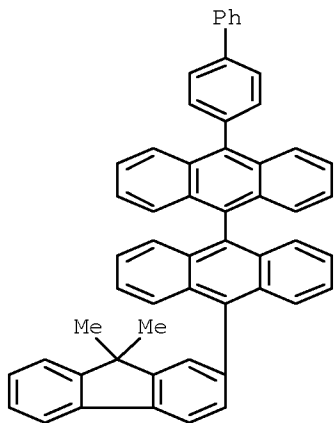


IT 400606-21-5 400606-87-3 577795-82-5  
 577795-83-6 577795-85-8  
 RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device comprising coupled anthracene fluorene derivative and with amino-substituted hydrocarbon)

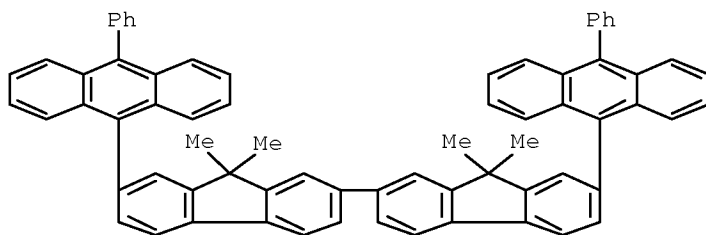
RN 400606-21-5 HCAPLUS

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



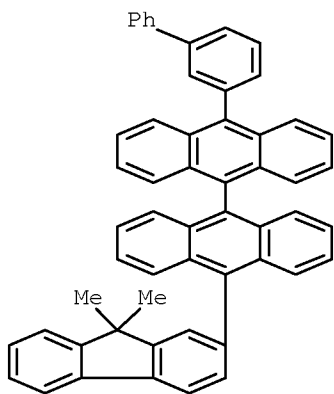
RN 400606-87-3 HCAPLUS

CN Anthracene, 9,9'-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluorene]-7,7'-diyl)bis[10-phenyl- (9CI) (CA INDEX NAME)



RN 577795-82-5 HCAPLUS

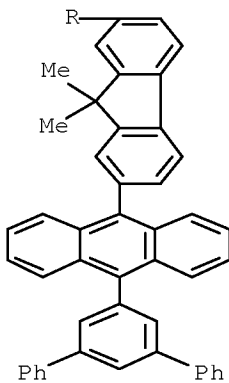
CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-3-yl-10'-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



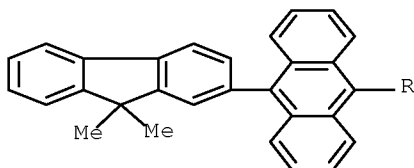
RN 577795-83-6 HCAPLUS

CN Anthracene, 9-[7-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]-10-[1,1':3',1''-terphenyl]-5'-yl- (9CI) (CA INDEX NAME)

PAGE 1-A

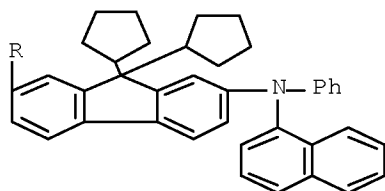
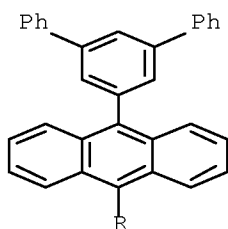


PAGE 2-A



RN 577795-85-8 HCAPLUS

CN 9H-Fluoren-2-amine, 9,9-dicyclopentyl-N-1-naphthalenyl-N-phenyl-7-(10-[1,1':3',1''-terphenyl]-5'-yl-9-anthracenyl)- (9CI) (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 12 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2003:510441 HCAPLUS Full-text

DN 139:92501

TI Organic electroluminescence component with  
acenaphtho[1,2-j]naphtho[2,3-l]fluoranthene derivative

IN Nakatsuka, Masakatsu; Shimamura, Takehiko; Ishida, Tsutomu; Tanabe,  
Yoshimitsu; Totani, Yoshiyuki

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 37 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003187979	A	20030704	JP 2001-380785	20011214 <--
	JP 3818907	B2	20060906		
PRAI	JP 2001-380785		20011214		
OS	MARPAT 139:92501				

AB The invention refers to an organic electroluminescent component comprising an acenaphtho[1,2-j]naphtho[2,3-l]fluoranthene derivative I [X1-18 = H, halo, straight chain, branched or cyclic alkyl or alkoxy, (un)substituted aryl, aryloxy, aralkyl or amino, wherein groups may join together to form (un)substituted aliphatic carbon rings].

IT 554415-32-6

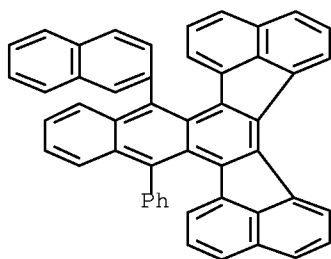
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescence component with  
acenaphtho[1,2-j]naphtho[2,3-l]fluoranthene derivative)

IT 554415-32-6

RL: DEV (Device component use); USES (Uses)  
(organic electroluminescence component with  
acenaphtho[1,2-j]naphtho[2,3-l]fluoranthene derivative)

RN 554415-32-6 HCAPLUS

CN Acenaphtho[1,2-j]naphtho[2,3-l]fluoranthene,  
10-(2-naphthalenyl)-15-phenyl- (9CI) (CA INDEX NAME)



L6 ANSWER 13 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2003:369071 HCAPLUS Full-text

DN 138:376130

TI Organic electroluminescent device with tetraaryl methane or tetraaryl silane

IN Suzuki, Koichi; Ueno, Kazunori; Saito, Akito

PA Canon Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 27 pp.

CODEN: JKXXAF

DT Patent

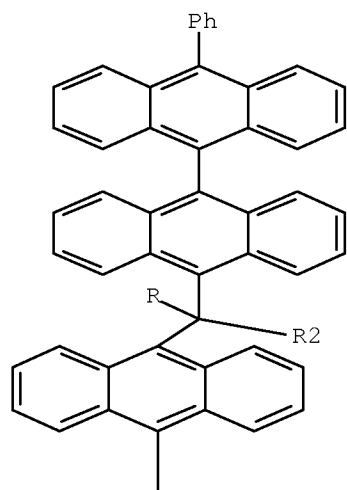
LA Japanese

FAN.CNT 1

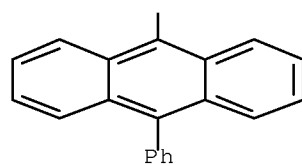
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003138251	A	20030514	JP 2001-332855	20011030 <--
PRAI	JP 2001-332855		20011030		
AB	The invention refers to an organic electroluminescent device comprising a tetraaryl methane or tetraaryl silane.				
IT	522666-04-2				
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent device with tetraaryl methane or tetraaryl silane)				
IT	522666-04-2				
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent device with tetraaryl methane or tetraaryl silane)				
RN	522666-04-2 HCAPLUS				
CN	9,9'-Bianthracene, 10,10'',10''',10''''-methanetetrayltetrakis[10'-phenyl- (9CI) (CA INDEX NAME)				



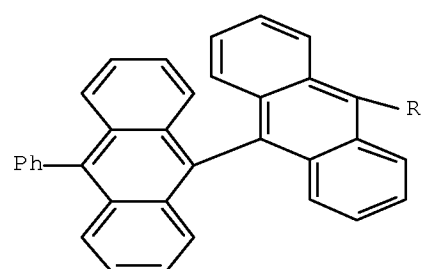
PAGE 1-A

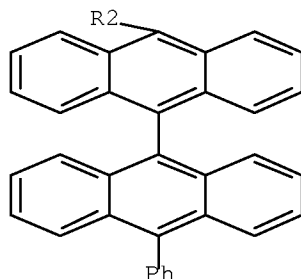


PAGE 2-A



PAGE 3-A





OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L6 ANSWER 14 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2003:349283 HCAPLUS Full-text

DN 138:376099

TI Organic electroluminescent devices of high brightness and luminescent efficiency and anthracene derivatives therefor

IN Ishida, Tsutomu; Shimamura, Takehiko; Tanabe, Yoshimitsu; Totani, Yoshiyuki; Nakatsuka, Masakatsu

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 99 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003128651	A	20030508	JP 2001-317783	20011016 <--
	JP 4220696	B2	20090204		
PRAI	JP 2001-317783		20011016		

OS MARPAT 138:376099

AB The anthracene derivs. have direct bonds between anthracene ring and fluorene ring and bear group I (Ar1, Ar2 = arylene; Z = bridging group).

IT 522615-51-6P 522615-52-7P 522615-53-8P  
 522615-54-9P 522615-64-1P 522615-66-3P  
 522615-67-4P 522615-68-5P 522615-77-6P  
 522615-78-7P 522615-79-8P 522615-80-1P  
 522615-83-4P 522615-90-3P 522615-91-4P  
 522615-94-7P 522615-95-8P 522615-96-9P  
 522615-98-1P 522615-99-2P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic LED of high luminescent efficiency)

IT 400607-71-8 400607-75-2 522616-11-1  
 522616-17-7 522616-25-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic LED of high luminescent efficiency)

IT 522615-51-6P 522615-52-7P 522615-53-8P  
 522615-54-9P 522615-64-1P 522615-66-3P  
 522615-67-4P 522615-68-5P 522615-77-6P  
 522615-78-7P 522615-79-8P 522615-80-1P  
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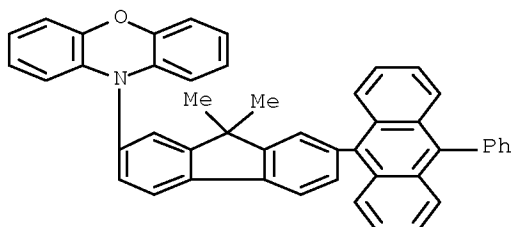
522615-98-1P 522615-99-2P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP  
(Preparation); USES (Uses)

(spirocyclic compds. containing direct bond between anthracene and fluorene  
rings for organic LED of high luminescent efficiency)

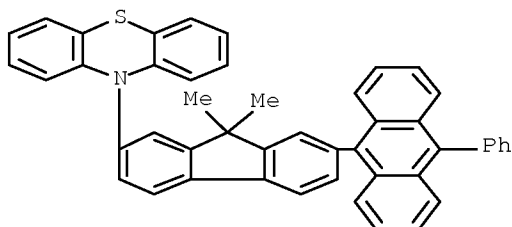
RN 522615-51-6 HCAPLUS

CN 10H-Phenoxazine, 10-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]- (CA INDEX NAME)



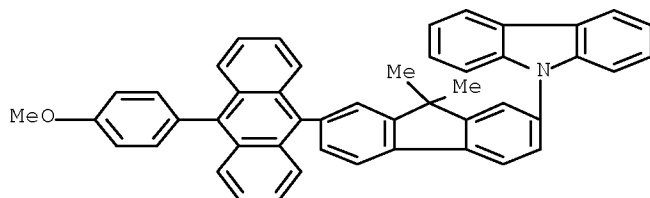
RN 522615-52-7 HCAPLUS

CN 10H-Phenothiazine, 10-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]- (CA INDEX NAME)



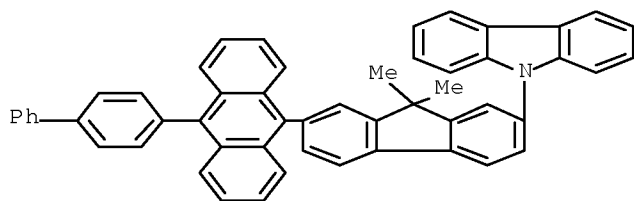
RN 522615-53-8 HCAPLUS

CN 9H-Carbazole, 9-[7-[10-(4-methoxyphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)



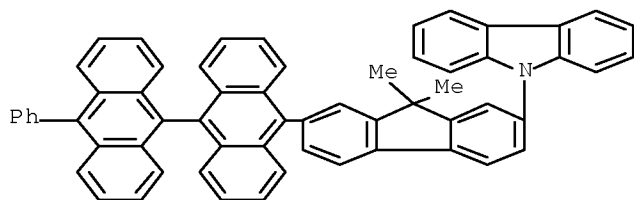
RN 522615-54-9 HCAPLUS

CN 9H-Carbazole, 9-[7-(10-[1,1'-biphenyl]-4-yl-9-anthracenyl)-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)



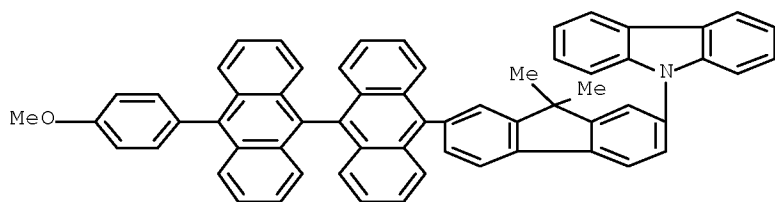
RN 522615-64-1 HCAPLUS

CN 9H-Carbazole, 9-[9,9-dimethyl-7-(10'-phenyl[9,9'-bianthracen]-10-yl)-9H-fluoren-2-yl]- (CA INDEX NAME)



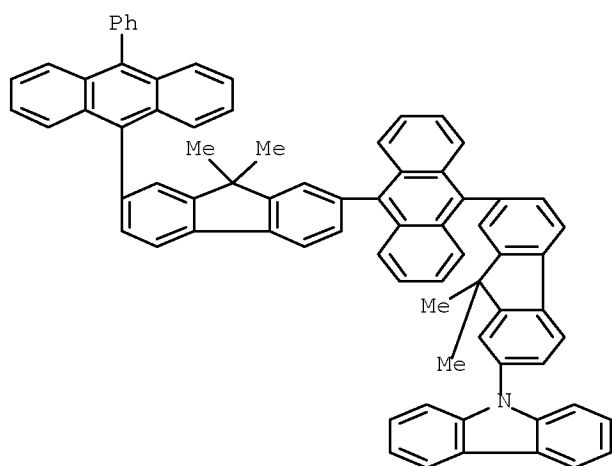
RN 522615-66-3 HCAPLUS

CN 9H-Carbazole, 9-[7-[10'-(4-methoxyphenyl)[9,9'-bianthracen]-10-yl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)



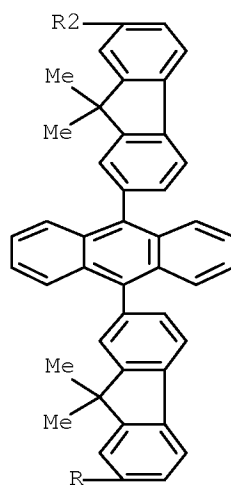
RN 522615-67-4 HCAPLUS

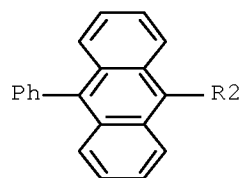
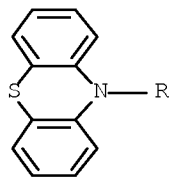
CN 9H-Carbazole, 9-[7-[10-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)



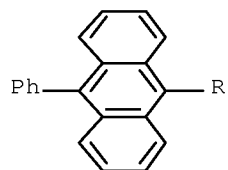
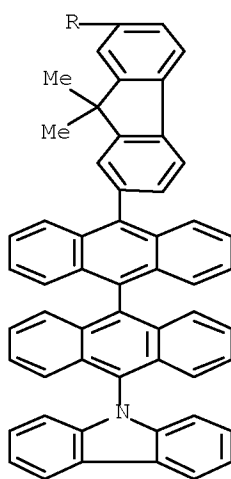
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 CN 10H-Phenothiazine, 10-[7-[10-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)

PAGE 1-A

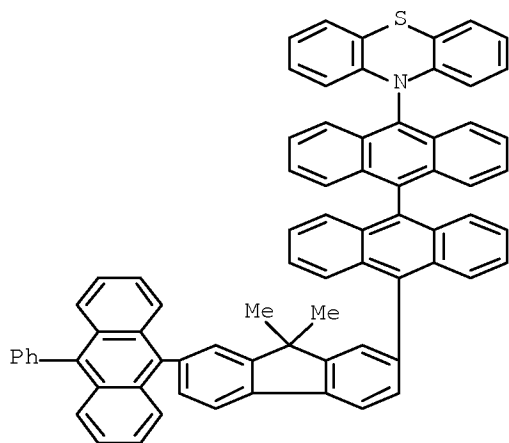




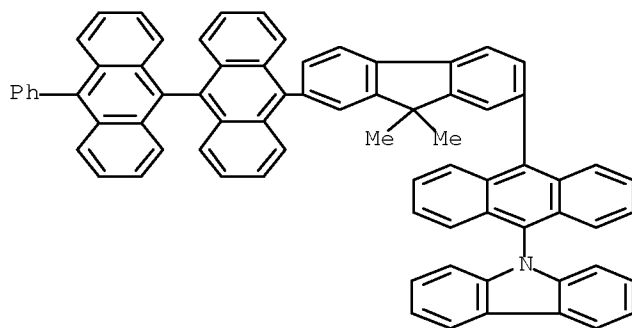
RN 522615-77-6 HCAPLUS  
 CN 9H-Carbazole, 9-[10'-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]- (CA INDEX NAME)



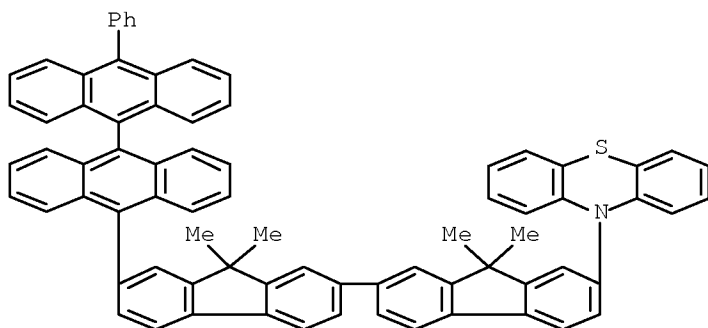
RN 522615-78-7 HCAPLUS  
 CN 10H-Phenothiazine, 10-[10'-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]- (CA INDEX NAME)



RN 522615-79-8 HCAPLUS  
 CN 9H-Carbazole, 9-[10-[9,9-dimethyl-7-(10'-phenyl[9,9'-bianthracen]-10-yl)-9H-fluoren-2-yl]-9-anthracenyl]- (CA INDEX NAME)



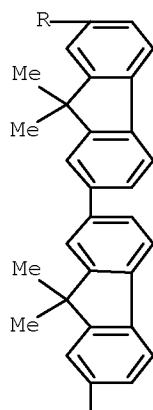
RN 522615-80-1 HCAPLUS  
 CN 10H-Phenothiazine, 10-[9,9,9',9'-tetramethyl-7'-(10'-phenyl[9,9'-bianthracen]-10-yl)[2,2'-bi-9H-fluoren]-7-yl]- (CA INDEX NAME)



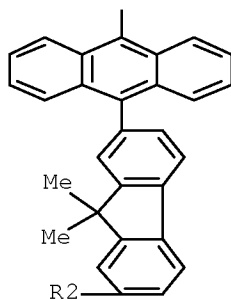
RN 522615-83-4 HCAPLUS

CN 9H-Carbazole, 9-[9,9-dimethyl-7-[10-[9,9,9',9'-tetramethyl-7'-[10-(4-methylphenyl)-9-anthracenyl][2,2'-bi-9H-fluoren]-7-yl]-9-anthracenyl]-9H-fluoren-2-yl]- (CA INDEX NAME)

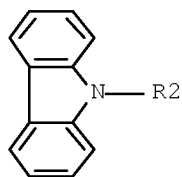
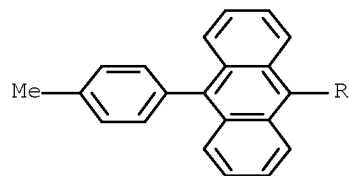
PAGE 1-A



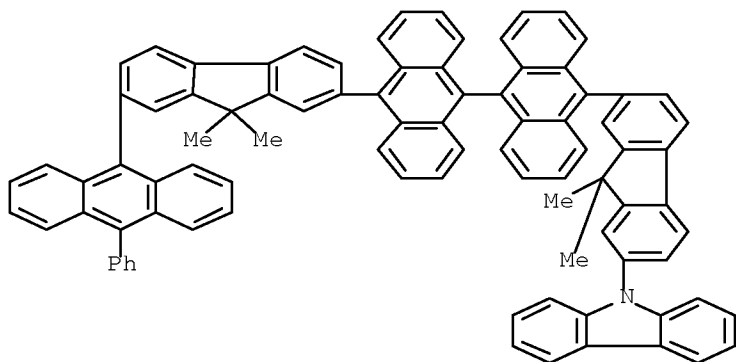
PAGE 2-A



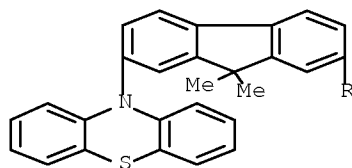
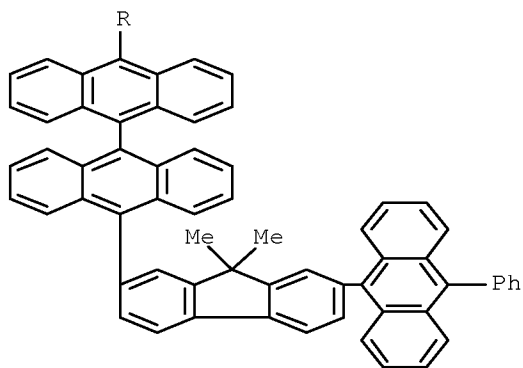




RN 522615-90-3 HCAPLUS  
 CN 9H-Carbazole, 9-[7-[10'-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)

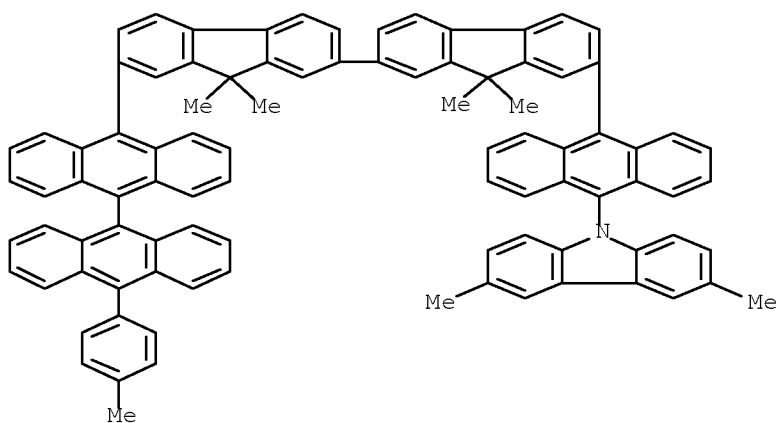


RN 522615-91-4 HCAPLUS  
 CN 10H-Phenothiazine, 10-[7-[10'-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)



RN 522615-94-7 HCAPLUS

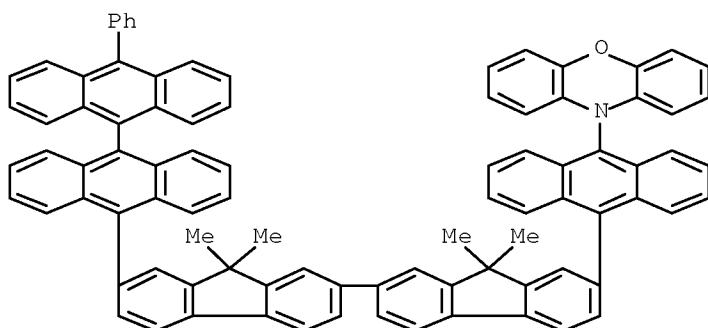
CN 9H-Carbazole, 3,6-dimethyl-9-[10-[9,9,9',9'-tetramethyl-7'-[10'-(4-methylphenyl)[9,9'-bianthracen]-10-yl][2,2'-bi-9H-fluoren]-7-yl]-9-anthracenyl]- (CA INDEX NAME)



RN 522615-95-8 HCAPLUS

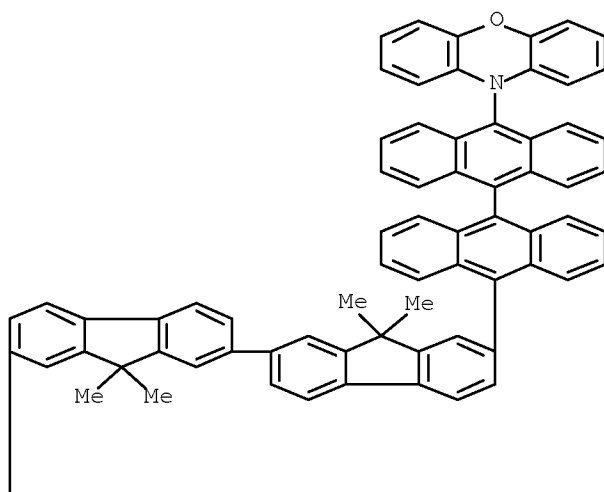
CN 10H-Phenoxazine, 10-[10-[9,9,9',9'-tetramethyl-7'-(10'-phenyl[9,9'-bianthracen]-10-yl)[2,2'-bi-9H-fluoren]-7-yl]-9-anthracenyl]- (9CI) (CA

INDEX NAME)

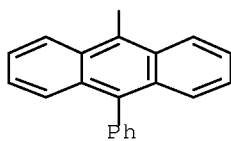


RN 522615-96-9 HCAPLUS  
 CN 10H-Phenoxazine, 10-[10'-[9,9,9',9'-tetramethyl-7'-(10-phenyl-9-anthracenyl)[2,2'-bi-9H-fluoren]-7-yl][9,9'-bianthracen]-10-yl]- (9CI)  
 (CA INDEX NAME)

PAGE 1-A

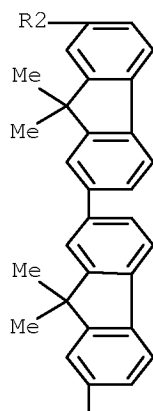


PAGE 2-A

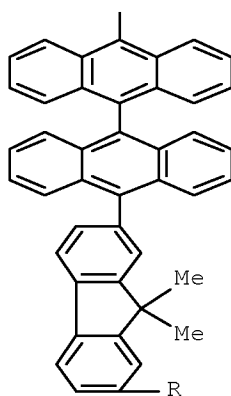


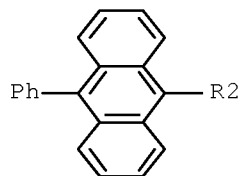
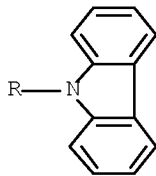
RN 522615-98-1 HCAPLUS  
 CN 9H-Carbazole, 9-[9,9-dimethyl-7-[10'-[9,9,9',9'-tetramethyl-7'-(10-phenyl-9-anthracenyl)[2,2'-bi-9H-fluoren]-7-yl][9,9'-bianthracen]-10-yl]-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A



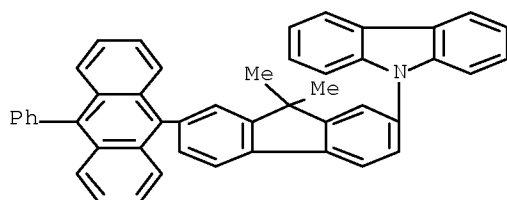
PAGE 2-A





RN 522615-99-2 HCAPLUS

CN 9H-Carbazole, 9-[9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]-  
(CA INDEX NAME)



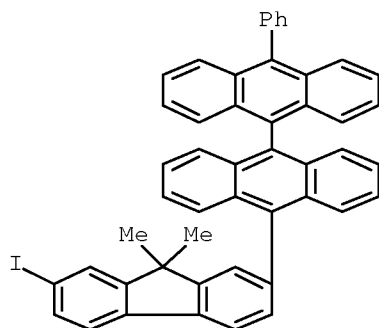
IT 400607-71-8 400607-75-2 522616-11-1  
522616-17-7 522616-25-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(spirocyclic compds. containing direct bond between anthracene and fluorene rings for organic LED of high luminescent efficiency)

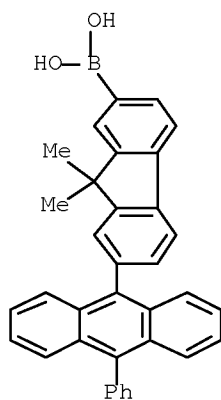
RN 400607-71-8 HCAPLUS

CN 9,9'-Bianthracene, 10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)-10'-phenyl-  
(CA INDEX NAME)



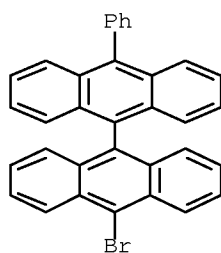
RN 400607-75-2 HCAPLUS

CN Boronic acid, [9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]-  
(9CI) (CA INDEX NAME)



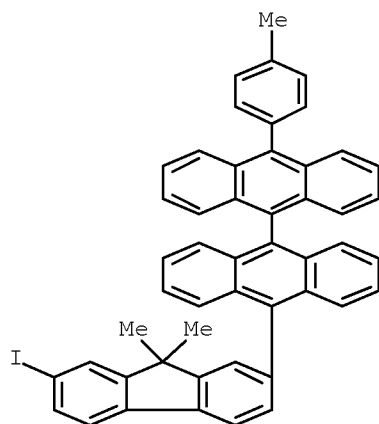
RN 522616-11-1 HCAPLUS

CN 9,9'-Bianthracene, 10-bromo-10'-phenyl- (CA INDEX NAME)



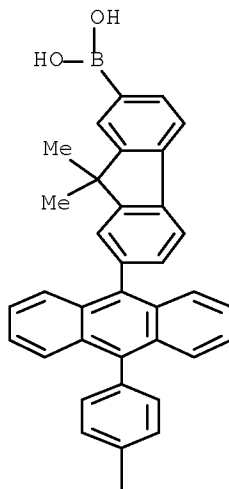
RN 522616-17-7 HCAPLUS

CN 9,9'-Bianthracene, 10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)-10'-(4-methylphenyl)- (CA INDEX NAME)



RN 522616-25-7 HCAPLUS  
 CN Boronic acid, [9,9-dimethyl-7-[10-(4-methylphenyl)-9-anthracenyl]-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

L6 ANSWER 15 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2003:299391 HCAPLUS Full-text  
 DN 138:330028

TI Organic thin film transistor  
 IN Higashiguchi, Itaru; Oda, Atsushi; Ishikawa, Hitoshi  
 PA NEC Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 25 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2003115624	A	20030418	JP 2001-310210	20011005 <--
	JP 3856202	B2	20061213		
	US 20030111692	A1	20030619	US 2002-263665	20021004
	US 6784452	B2	20040831		
	CN 1433095	A	20030730	CN 2002-151811	20021008
	CN 1288768	C	20061206		
PRAI	JP 2001-310210	A	20011005		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB An organic thin film transistor having a high response speed comprises first and second electrode sandwiching an organic layer, whose carrier transport direction is same as its thickness direction, from I, where R1 - R6 = H, halogen, OH, (un)substituted amino group, nitro group, cyano group, (un)substituted alkyl, (un)substituted alkenyl, (un)substituted cycloalkyl, (un)substituted alkoxy, (un)substituted aromatic hydrocarbon, (un)substituted aromatic heterocyclic, (un)substituted aralkyl, (un)substituted aryloxy, (un)substituted alkoxycarbonyl, carboxyl, or ring, L1 = (un)substituted alkyl, (un)substituted alkenyl, (un)substituted cycloalkyl, (un)substituted aromatic hydrocarbon, (un)substituted heterocyclic, or (un)substituted aralkyl, n = 1 - 3, method = 0 - 2, and M = metal ion having (n+m) valence.

IT 510775-14-1

RL: DEV (Device component use); USES (Uses)  
 (organic films of thin film transistor)

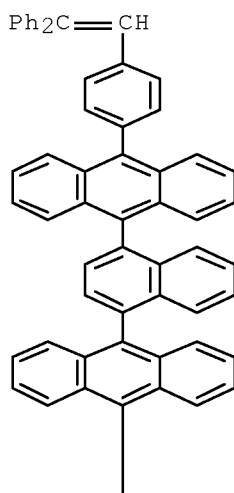
IT 510775-14-1

RL: DEV (Device component use); USES (Uses)  
 (organic films of thin film transistor)

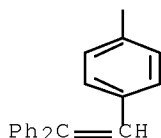
RN 510775-14-1 HCAPLUS

CN Anthracene, 9,9'-(1,4-naphthalenediyl)bis[10-[4-(2,2-diphenylethenyl)phenyl]- (CA INDEX NAME)

PAGE 1-A







OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L6 ANSWER 16 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2002:964695 HCAPLUS Full-text  
 DN 138:47036  
 TI Organic electroluminescence device with gallium quinolinato complex and styryl arylene host  
 IN Hosokawa, Chishio; Funahashi, Masakazu; Sakai, Toshio; Arakane, Takashi; Yamamoto, Hiroshi  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO PCT Int. Appl., 73 pp.  
 CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002102118	A1	20021219	WO 2002-JP4427	20020507 <--
	W: CN, IN, JP, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1404160	A1	20040331	EP 2002-724697	20020507 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	CN 1513283	A	20040714	CN 2002-811332	20020507 <--
	CN 100431193	C	20081105		
	JP 4029071	B2	20080109	JP 2003-504716	20020507 <--
	US 20030077480	A1	20030424	US 2002-141982	20020510 <--
	TW 286911	B	20070911	TW 2002-91109908	20020513 <--
	TW 299749	B	20080811	TW 2006-95148537	20020513 <--
	KR 900375	B1	20090602	KR 2003-715965	20031205
	US 20050227111	A1	20051013	US 2004-935102	20040908
	US 7087322	B2	20060808		
	US 20060257687	A1	20061116	US 2006-480469	20060705
PRAI	JP 2001-170960	A	20010606		
	WO 2002-JP4427	W	20020507		
	US 2002-141982	B1	20020510		
	US 2004-935102	A3	20040908		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

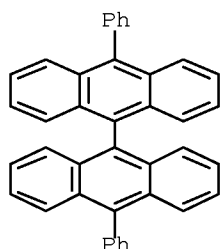
AB The invention refers to an organic electroluminescence device comprising at least one organic thin-film layer with a laminate containing a metal complex with energy gap > 2.8 eV, and a host material layer. The electroluminescence device exhibits a high luminance and has high emission efficiency and a long life.

IT 23102-67-2  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescence device with gallium quinolinato complex and styryl arylene host)

IT 23102-67-2  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescence device with gallium quinolinato complex and styryl arylene host)

RN 23102-67-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 17 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2002:867325 HCAPLUS Full-text

DN 137:377245

TI Organic electroluminescent device containing aromatic condensed ring compound

IN Suzuki, Koichi; Senoo, Akihiro; Tanabe, Hiroshi

PA Canon Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 50 pp.  
 CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2002329580	A	20021115	JP 2002-36804	20020214 <--
	JP 3870102	B2	20070117		
	US 20020177009	A1	20021128	US 2002-77800	20020220 <--
	US 6830829	B2	20041214		
	US 20050048318	A1	20050303	US 2004-940734	20040915
	US 6994922	B2	20060207		
	JP 2007013199	A	20070118	JP 2006-230669	20060828
PRAI	JP 2001-46225	A	20010222		
	JP 2002-36804	A	20020214		
	US 2002-77800	A3	20020220		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 137:377245

AB The electroluminescent device has ≥1 organic layer containing aromatic condensed ring compound a benzene substituted with R1-4 and Ar1-2 (I), a benzene substituted with R5-7 and Ar3-5 (II), or a benzene substituted with R8-9 and Ar6-9 (III) [R1-R9 = H, alkyl, (substituted)alkyl, (substituted)aryl, (substituted)heterocycle, (substituted)amino, cyano; Ar1-

Ar9 = (substituted)aromatic condensed ring, (substituted)condensed heterocycle, optionally linked via phenylene], preferably claimed compds. II (R5-R7 = H, Ar3-Ar5 = LH at 1,3,5-positions, L = 9,9-dimethylfluorene-2,7-diyl), II (R5-R7 = H, Ar3-Ar5 = L2H at 1,3,5-positions), III (R8 = R9 = H, Ar6-Ar9 = LH at 1,2,4,5-positions), or III (R8 = R9 = H, Ar6-Ar9 = L2H at 1,2,4,5-positions), as electron-transporting or light-emitting layers between a cathode and an anode. The organic layer in the device is useful as an electron-transporting layer, an emitting layer, and a hole/exciton-blocking layer and the device shows high emission, low driving voltage, and improved durability.

IT 475461-00-8

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device containing aromatic condensed ring compound as

electron-transporting or light-emitting or hole/exciton-blocking layer)

IT 475461-00-8

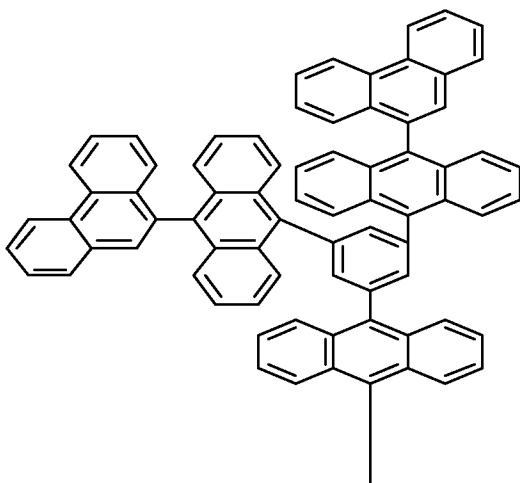
RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device containing aromatic condensed ring compound as

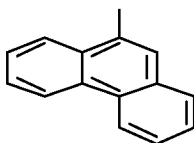
electron-transporting or light-emitting or hole/exciton-blocking layer)

RN 475461-00-8 HCAPLUS

CN Anthracene, 9,9',9''-(1,3,5-benzenetriyl)tris[10-(9-phenanthrenyl)- (CA INDEX NAME)



PAGE 1-A



PAGE 2-A

OSC.G 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (27 CITINGS)

L6 ANSWER 18 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
AN 2002:849756 HCAPLUS Full-text  
DN 137:360139  
TI Double-spiro organic compounds and electroluminescent devices  
IN Kim, Kong-Kyeum; Son, Se-Hwan; Yoon, Seok-Hee; Bae, Jae-Soon; Lee,  
Youn-Gu; Im, Sung-Gap; Kim, Ji-Eun; Lee, Jae-Chol  
PA LG Chem, Ltd., S. Korea  
SO PCT Int. Appl., 117 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	WO 2002088274	A1	20021107	WO 2002-KR458	20020318 <--
	W: CN, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	KR 2002083614	A	20021104	KR 2001-23038	20010427 <--
	KR 2002083615	A	20021104	KR 2001-23039	20010427 <--
	US 20040023060	A1	20040205	US 2002-99781	20020314 <--
	US 6998487	B2	20060214		
	EP 1294823	A1	20030326	EP 2002-705589	20020318 <--
	EP 1294823	B1	20061213		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	JP 2004529937	T	20040930	JP 2002-585559	20020318 <--
	JP 3971310	B2	20070905		
	EP 1645552	A1	20060412	EP 2005-20697	20020318 <--
	EP 1645552	B1	20100505		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	AT 348136	T	20070115	AT 2002-705589	20020318 <--
	ES 2274003	T3	20070516	ES 2002-705589	20020318 <--
	CN 100488923	C	20090520	CN 2002-801380	20020318 <--
	AT 466828	T	20100515	AT 2005-20697	20020318 <--
	TW 591096	B	20040611	TW 2002-91105844	20020326 <--
	US 20040170863	A1	20040902	US 2003-718083	20031119
	US 6984462	B2	20060110		
PRAI	KR 2001-23038	A	20010427		
	KR 2001-23039	A	20010427		
	US 2002-99781	A3	20020314		
	EP 2002-705589	A3	20020318		
	WO 2002-KR458	W	20020318		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 137:360139

AB Double-spiro organic compds. are claimed which are described by the general formula I (R1-24 = independently selected substituents not all of which are H). Light-emitting, hole-transporting, and electron-transporting materials comprising the compds. are also described. Electroluminescent materials comprising the compds, including deposited films, methods for depositing the materials, and organic electroluminescent devices employing the materials, and method for fabricating the devices, are also described.

IT 474688-01-2 474688-19-2 474688-20-5  
474688-30-7 474688-34-1 474688-35-2  
474688-43-2

RL: DEV (Device component use); USES (Uses)

(double-spiro organic compds. and electroluminescent devices using them)

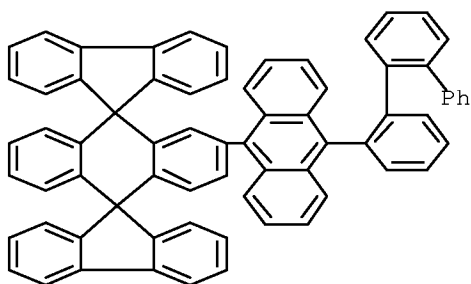
IT 474687-98-4P 474688-00-1P 474688-02-3P  
 474688-03-4P 474688-58-9P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)

(double-spiro organic compds. and electroluminescent devices using them)

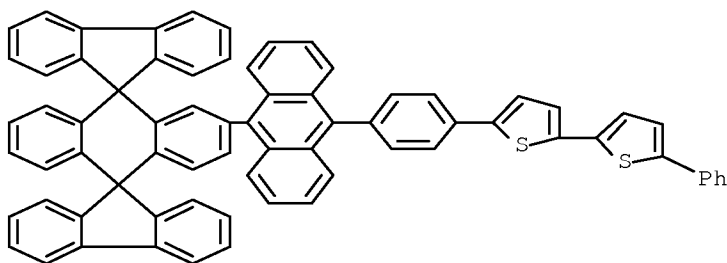
IT 474688-01-2 474688-19-2 474688-20-5  
 474688-30-7 474688-34-1 474688-35-2  
 474688-43-2  
 RL: DEV (Device component use); USES (Uses)

(double-spiro organic compds. and electroluminescent devices using them)

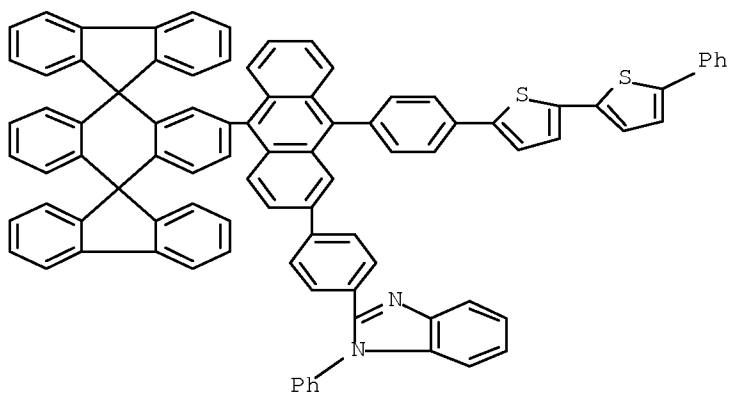
RN 474688-01-2 HCAPLUS  
 CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
 2'-(10-[1,1':2',1''-terphenyl]-2-yl-9-anthracenyl)- (9CI) (CA INDEX NAME)



RN 474688-19-2 HCAPLUS  
 CN 2,2'-Bithiophene, 5-[4-(10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene]-2'-yl-9-anthracenyl)phenyl]-5'-phenyl- (9CI) (CA INDEX NAME)

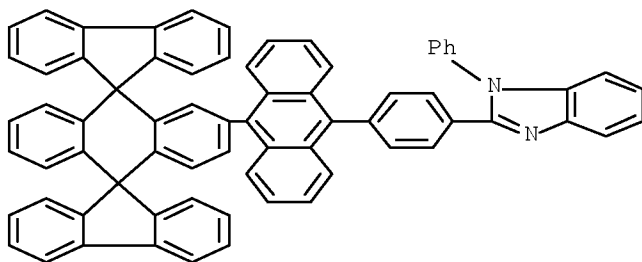


RN 474688-20-5 HCAPLUS  
 CN 1H-Benzimidazole, 2-[4-[10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene]-2'-yl-9-[4-(5'-phenyl[2,2'-bithiophen]-5-yl)phenyl]-2-anthracenyl]phenyl]-1-phenyl- (9CI) (CA INDEX NAME)



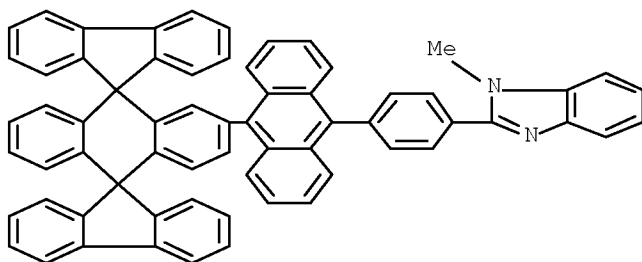
RN 474688-30-7 HCAPLUS

CN 1H-Benzimidazole, 2-[4-(10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluoren]-2'-yl-9-anthracenyl)phenyl]-1-phenyl- (9CI) (CA INDEX NAME)



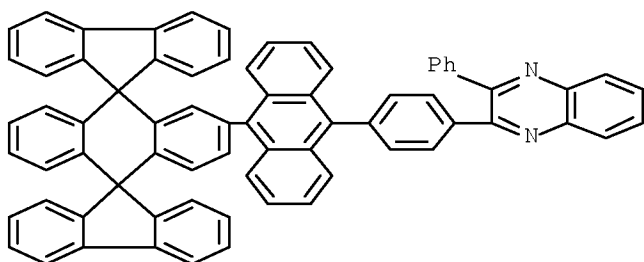
RN 474688-34-1 HCAPLUS

CN 1H-Benzimidazole, 2-[4-(10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluoren]-2'-yl-9-anthracenyl)phenyl]-1-methyl- (9CI) (CA INDEX NAME)



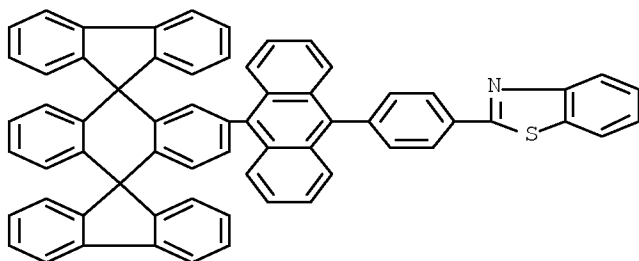
RN 474688-35-2 HCAPLUS

CN Quinoxaline, 2-[4-(10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluoren]-2'-yl-9-anthracenyl)phenyl]-3-phenyl- (9CI) (CA INDEX NAME)



RN 474688-43-2 HCAPLUS

CN Benzothiazole, 2-[4-(10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene]-2'-yl-9-anthracenyl)phenyl]- (9CI) (CA INDEX NAME)



IT 474687-98-4P 474688-00-1P 474688-02-3P

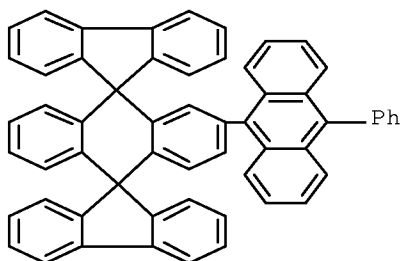
474688-03-4P 474688-58-9P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(double-spiro organic compds. and electroluminescent devices using them)

RN 474687-98-4 HCAPLUS

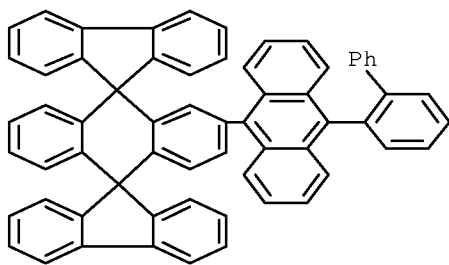
CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene], 2'-(10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)



RN 474688-00-1 HCAPLUS

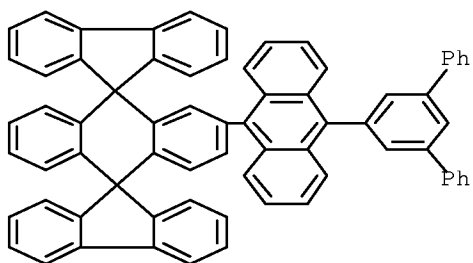
CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],

2'-(10-[1,1'-biphenyl]-2-yl-9-anthracenyl)- (9CI) (CA INDEX NAME)



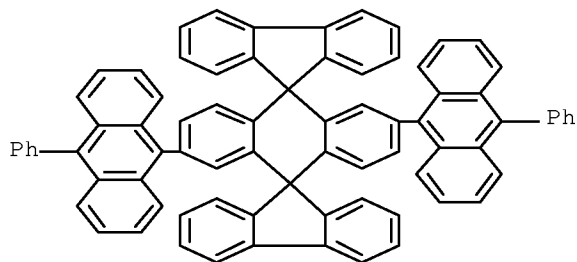
RN 474688-02-3 HCAPLUS

CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2'-(10-[1,1':3',1''-terphenyl]-5'-yl-9-anthracenyl)- (9CI) (CA INDEX  
NAME)



RN 474688-03-4 HCAPLUS

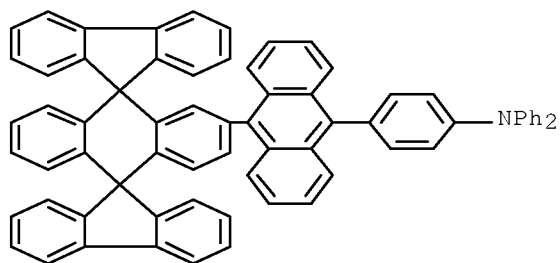
CN Dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluorene],  
2',6'-bis(10-phenyl-9-anthracenyl)- (9CI) (CA INDEX NAME)



RN 474688-58-9 HCAPLUS

CN Benzenamine, 4-(10-dispiro[9H-fluorene-9,9'(10'H)-anthracene-10',9''-[9H]fluoren]-2'-yl-9-anthracenyl)-N,N-diphenyl- (9CI) (CA INDEX NAME)





OSC.G 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS)  
 RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 19 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2002:832741 HCAPLUS Full-text  
 DN 137:343711  
 TI Organic EL element and compound having benzofluoranthene derivatives used therein  
 IN Fujita, Tetsuji; Kitagawa, Sumiko; Inoue, Tetsushi  
 PA TDK Corporation, Japan  
 SO PCT Int. Appl., 331 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002085822	A1	20021031	WO 2002-JP3925	20020419 <--
	W: CN, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2003026616	A	20030129	JP 2002-118057	20020419 <--
	JP 4224252	B2	20090212		
	EP 1380556	A1	20040114	EP 2002-722710	20020419 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	TW 581751	B	20040401	TW 2002-91108294	20020419 <--
	US 7097917	B1	20060829	US 2002-125480	20020419 <--
	EP 1719748	A2	20061108	EP 2006-116129	20020419 <--
	EP 1719748	A3	20061115		
	EP 1719748	B1	20090722		
	R: DE, NL				
	CN 1325449	C	20070711	CN 2002-801302	20020419 <--
PRAI	JP 2001-121788	A	20010419		
	EP 2002-722710	A3	20020419		
	WO 2002-JP3925	W	20020419		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

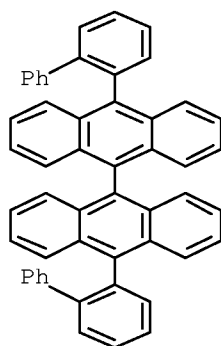
OS MARPAT 137:343711

AB Title compound is represented by a general formula  $X_nY$  [  $X = I$ ;  $Y =$  a single bond or (un)substituted aryl or heterocyclic linkage;  $n = 2$  or  $3$ ;  $R1-8$ ,  $a - d = H$ , alkyl, (un)substituted aryl, allyl, heterocyclyl, or arylamino, or amino]. The compound offers an excellent durability and an excellent color purity with great satisfactory luminescent performance.

IT 172285-83-5P

RL: DEV (Device component use); SPN (Synthetic preparation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (electroluminescent devices having benzofluoranthene derivs.)  
 IT 172285-83-5P  
 RL: DEV (Device component use); SPN (Synthetic preparation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (electroluminescent devices having benzofluoranthene derivs.)  
 RN 172285-83-5 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)  
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 20 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2002:716895 HCAPLUS Full-text  
 DN 137:255075  
 TI Electroluminescent (EL) devices  
 IN Hu, Nan-Xing; Aziz, Hany; Jain, Poonam; Popovic, Zoran D.  
 PA Xerox Corporation, USA  
 SO U.S. Pat. Appl. Publ., 46 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20020132134	A1	20020919	US 2001-771311	20010126 <--
	US 6479172	B2	20021112		
	US 20030044646	A1	20030306	US 2002-232558	20020829
	US 6562485	B2	20030513		
PRAI	US 2001-771311	A3	20010126		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OS MARPAT 137:255075

AB Electroluminescent devices are described which employ compds. are described by the general formula I and II (R1 and R2 = H, alkyl, alicyclic alkyl, alkoxy, halo, and cyano groups, and, in II, aryl groups; Ar1 and Ar2 = independently selected aromatic component or an aryl group comprised of 4-15 conjugate-bonded or fused benzene rings; R3, R4, R5, and R6 = independently selected H, an alkyl, alicyclic alkyl, aryl, and alkoxy group; wherein R3 and R4, or R4 and R5 are optionally combined into a bivalent hydrocarbon group selected from the group consisting of an alkylene, an alkylidene, an alicyclic alkylidene, and an arylalkylidene; Ar3 and Ar4 = independently selected aryl groups; and

Ar = a tetravalent aromatic group). The compds. and their mixts. are also described.

IT 460347-70-0

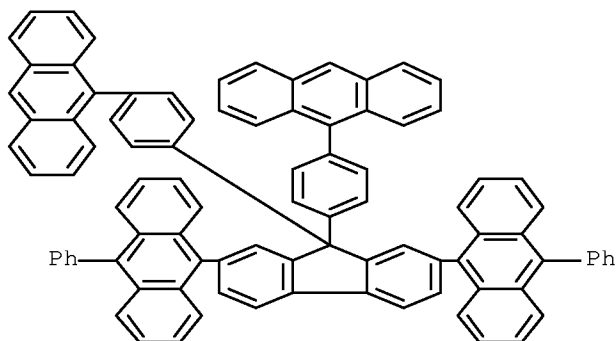
RL: DEV (Device component use); USES (Uses)  
(electroluminescent devices employing fluorene derivs. and aryl  
derivs.)

IT 460347-70-0

RL: DEV (Device component use); USES (Uses)  
(electroluminescent devices employing fluorene derivs. and aryl  
derivs.)

RN 460347-70-0 HCAPLUS

CN Anthracene, 9,9'-[9,9-bis[4-(9-anthracenyl)phenyl]-9H-fluorene-2,7-  
diyl]bis[10-phenyl- (9CI) (CA INDEX NAME)



OSC.G 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS)

L6 ANSWER 21 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2002:674604 HCAPLUS Full-text

DN 137:208193

TI Organic electroluminescent device and display unit

IN Ueda, Naoyuki; Takada, Ichinori; Shibamura, Tetsuo; Ichimura, Mari;  
Tamura, Shinichiro

PA Sony Corporation, Japan

SO U.S. Pat. Appl. Publ., 24 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20020122900	A1	20020905	US 2002-68353	20020206 <--
	US 6916552	B2	20050712		
	JP 2002313579	A	20021025	JP 2002-6851	20020116 <--
	JP 3669333	B2	20050706		
	KR 858832	B1	20080917	KR 2002-6536	20020205 <--
PRAI	JP 2001-29533	A	20010206		
	JP 2002-6851	A	20020116		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 137:208193

AB Organic electroluminescent devices comprising at least a hole transportation layer and a luminescent layer held between an anode and a cathode are described in which the luminescent layer comprises a spiro compound represented by the general formula

2,2',7,7'-tetrakis(Ar)-9,9'-spirobifluorene; and the hole transportation layer comprises a triphenylamine tetramer represented by the general formulas (R21-C6H4)(R22-C6H4)N(p-C6H4)2N(R23-C6H4)(p-C6H4)2(R24-C6H4)N(p-C6H4)2N(R25-C6H4)(R26-C6H4) or [(R31-C6H4)(R32-C6H4)N(p-C6H4)2]3N (Ar = independently selected a biphenyl, substituted biphenyl, naphthyl, substituted naphthyl, anthryl, or substituted anthryl groups; and R21-26 and R31-32 = independently selected H, C1-12 alkyl, cycloalkyl, C5-a8 aryl, or substituted aryl groups). Displays employing the devices are also described.

IT 454182-29-7

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent devices using spiro compound-based luminescent layers and triphenylamine tetramer-based hole-transport layers and displays using them)

IT 454182-29-7

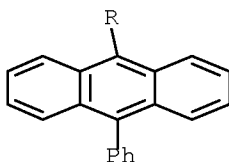
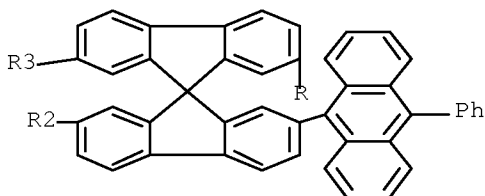
RL: DEV (Device component use); USES (Uses)

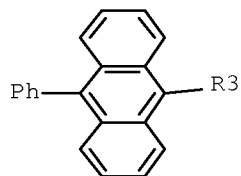
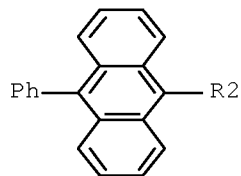
(organic electroluminescent devices using spiro compound-based luminescent layers and triphenylamine tetramer-based hole-transport layers and displays using them)

RN 454182-29-7 HCAPLUS

CN 9,9'-Spirobi[9H-fluorene], 2,2',7,7'-tetrakis(10-phenyl-9-anthracenyl)-  
(9CI) (CA INDEX NAME)

PAGE 1-A





OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)  
 RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 22 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2002:408989 HCAPLUS Full-text  
 DN 136:393082  
 TI Organic electroluminescent device with bis-anthracene  
 IN Sakai, Toshio; Fukuoka, Kenichi; Tokairin, Hiroshi; Hosokawa, Chishio  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO PCT Int. Appl., 26 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002043448	A1	20020530	WO 2001-JP10273	20011126 <--
	W: CN, IN, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2002164178	A	20020607	JP 2000-359177	20001127 <--
	TW 516337	B	20030101	TW 2001-90129086	20011123 <--
	EP 1246510	A1	20021002	EP 2001-983831	20011126 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	US 20020136922	A1	20020926	US 2001-993660	20011127 <--
	US 6803121	B2	20041012		
	IN 2002CN01133	A	20070907	IN 2002-CN1133	20020725 <--
	KR 842980	B1	20080701	KR 2002-709674	20020726 <--
PRAI	JP 2000-359177	A	20001127		
	WO 2001-JP10273	W	20011126		

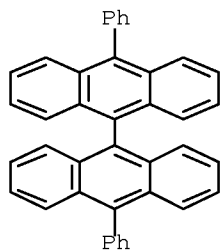
# ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention refers to an organic electroluminescent device comprising an organic compound layer with a light-emitting material and a bis-(condensed aromatic) in order to suppress crystallization even under prolonged operation and high temps., and enhance durability.

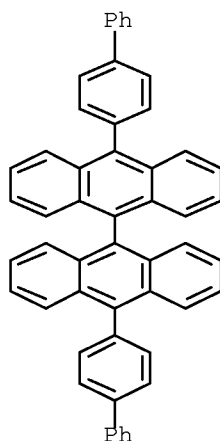
IT 23102-67-2 172285-79-9

RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescence device)

IT 23102-67-2 172285-79-9  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescence device)  
 RN 23102-67-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



RN 172285-79-9 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

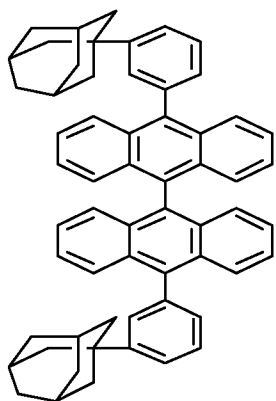


OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)  
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

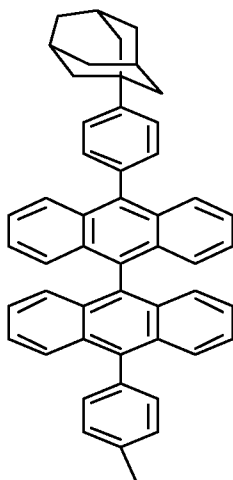
L6 ANSWER 23 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2002:313483 HCAPLUS Full-text  
 DN 136:332524  
 TI Organic electroluminescent devices  
 IN Hosokawa, Chishio; Funahashi, Masakazu  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 20 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

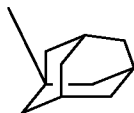
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002124385 A 20020426 JP 2000-319265 20001019 <--  
 PRAI JP 2000-319265 20001019  
 OS MARPAT 136:332524  
 AB The devices comprise a pair of electrodes interposing an organic electroluminescent laminate containing a phosphor layer comprising a polyarom. hydrocarbon ring.  
 IT 415683-04-4 415683-05-5  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent devices)  
 IT 415683-04-4 415683-05-5  
 RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent devices)  
 RN 415683-04-4 HCAPLUS  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,1'-([9,9'-bianthracene]-10,10'-diyldi-3,1-phenylene)bis- (9CI) (CA INDEX NAME)



RN 415683-05-5 HCAPLUS  
 CN Tricyclo[3.3.1.1<sup>3,7</sup>]decane, 1,1'-([9,9'-bianthracene]-10,10'-diyldi-4,1-phenylene)bis- (9CI) (CA INDEX NAME)





OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 24 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2002:142641 HCAPLUS Full-text  
 DN 136:191499  
 TI Hydrocarbon compound for organic electroluminescent elements and using them  
 IN Ishida, Tsutomu; Shimamura, Takehiko; Totani, Yoshiyuki; Nakatsuka, Masakatsu  
 PA Mitsui Chemicals, Inc., Japan  
 SO PCT Int. Appl., 251 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002014244	A1	20020221	WO 2001-JP6920	20010810 <--
	W: KR, US				
	RW: DE, FR, NL				
	JP 2002154993	A	20020528	JP 2001-243306	20010810 <--
	EP 1221434	A1	20020710	EP 2001-955670	20010810 <--
	R: DE, FR, NL				
	TW 290546	B	20071201	TW 2001-90119621	20010810 <--
	US 20030087126	A1	20030508	US 2002-110241	20020410 <--
	US 6929870	B2	20050816		
	US 20050074631	A1	20050407	US 2004-930874	20040901
	US 7166240	B2	20070123		
PRAI	JP 2000-242476	A	20000810		
	JP 2000-268568	A	20000905		
	JP 2000-24276	A	20000810		
	WO 2001-JP6920	W	20010810		
	US 2002-110241	A3	20020410		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 136:191499

AB Title electroluminescent elements comprise one pair of electrodes and pinched between the electrodes,  $\geq 1$  layer(s) containing  $\geq 1$  novel hydrocarbon compound in a general formula  $X1(F1)j(A1)k(F2)l(A2)m(F3)nX2$  [ $A1-2 = (\text{un})\text{substituted anthracenediyl}$ ;  $F1-3 = (\text{un})\text{substituted fluorenediyl}$ ;  $X1-2 = \text{H, halo, straight, branched or cyclic alkyl, alkoxy, amino, aryl, or } (\text{un})\text{substituted amino, aryl or aralkyl, } j,m,n = 0, 1; k,l = 1, 2]$  having an anthracene ring and a fluorene ring which are directly bonded with each other. The compound can be suitably used for preparing an organic electroluminescent element being excellent in luminous efficiency and having a long luminous life.

IT 400605-76-7 400605-78-9 400605-79-0



400605-81-4	400605-82-5	400605-84-7
400605-85-8	400605-87-0	400605-90-5
400605-92-7	400605-94-9	400605-96-1
400605-97-2	400605-99-4	400606-00-0
400606-02-2	400606-03-3	400606-04-4
400606-06-6	400606-08-8	400606-14-6
400606-15-7	400606-17-9	400606-18-0
400606-19-1	400606-20-4	400606-21-5
400606-22-6	400606-23-7	400606-26-0
400606-28-2	400606-30-6	400606-39-5
400606-41-9	400606-43-1	400606-47-5
400606-48-6	400606-49-7	400606-50-0
400606-53-3	400606-55-5	400606-56-6
400606-57-7	400606-58-8	400606-59-9
400606-60-2	400606-61-3	400606-62-4
400606-63-5	400606-65-7	400606-66-8
400606-67-9	400606-68-0	400606-69-1
400606-71-5	400606-72-6	400606-73-7
400606-74-8	400606-75-9	400606-76-0
400606-77-1	400606-78-2	400606-80-6
400606-87-3	400606-88-4	400606-89-5
400606-90-8		

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(preparation of hydrocarbon compound for organic electroluminescent devices)

IT	400607-17-2	400607-18-3	400607-19-4
	400607-23-0	400607-24-1	400607-38-7
	400607-39-8	400607-66-1	400607-71-8
	400607-72-9	400607-73-0	400607-75-2
	400607-78-5	400607-79-6	400607-80-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of hydrocarbon compound for organic electroluminescent devices)

IT	400605-76-7	400605-78-9	400605-79-0
	400605-81-4	400605-82-5	400605-84-7
	400605-85-8	400605-87-0	400605-90-5
	400605-92-7	400605-94-9	400605-96-1
	400605-97-2	400605-99-4	400606-00-0
	400606-02-2	400606-03-3	400606-04-4
	400606-06-6	400606-08-8	400606-14-6
	400606-15-7	400606-17-9	400606-18-0
	400606-19-1	400606-20-4	400606-21-5
	400606-22-6	400606-23-7	400606-26-0
	400606-28-2	400606-30-6	400606-39-5
	400606-41-9	400606-43-1	400606-47-5
	400606-48-6	400606-49-7	400606-50-0
	400606-53-3	400606-55-5	400606-56-6
	400606-57-7	400606-58-8	400606-59-9
	400606-60-2	400606-61-3	400606-62-4
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	400606-67-9	400606-68-0	400606-69-1
	400606-71-5	400606-72-6	400606-73-7
	400606-74-8	400606-75-9	400606-76-0
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	400606-90-8		

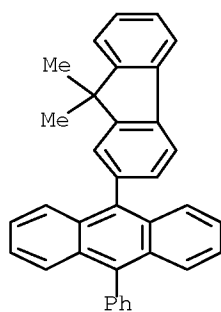
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(preparation of hydrocarbon compound for organic electroluminescent

devices)

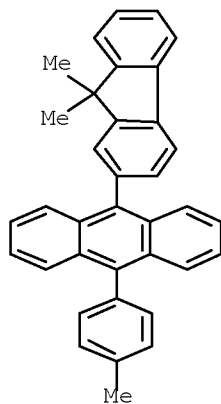
RN 400605-76-7 HCAPLUS

CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



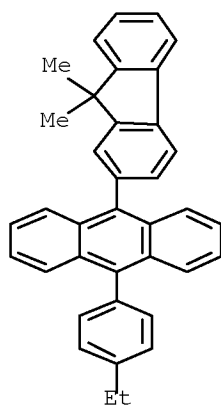
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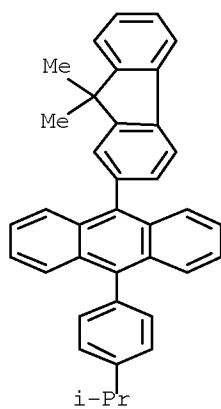
RN 400605-79-0 HCAPLUS

CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-(4-ethylphenyl)- (CA INDEX NAME)



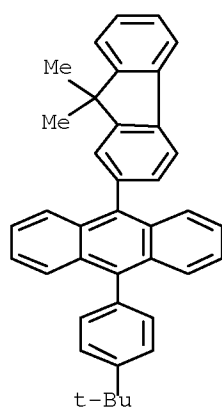
RN 400605-81-4 HCAPLUS

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(CA INDEX NAME)



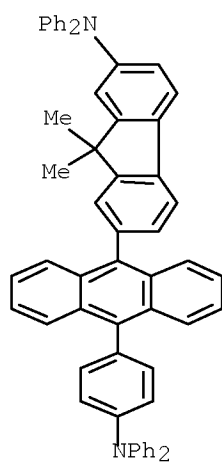
RN 400605-82-5 HCAPLUS

CN Anthracene, 9-[4-(1,1-dimethylethyl)phenyl]-10-(9,9-dimethyl-9H-fluoren-2-yl)-  
(CA INDEX NAME)



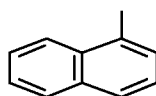
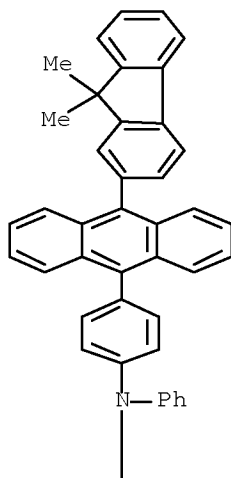
RN 400605-84-7 HCAPLUS

CN 9H-Fluoren-2-amine, 7-[10-[4-(diphenylamino)phenyl]-9-anthracenyl]-9,9-dimethyl-N,N-diphenyl- (CA INDEX NAME)

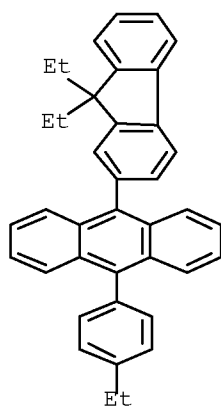


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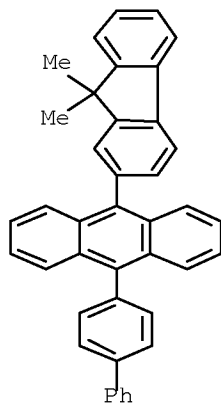
CN 1-Naphthalenamine, N-[4-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]phenyl]-N-phenyl- (CA INDEX NAME)



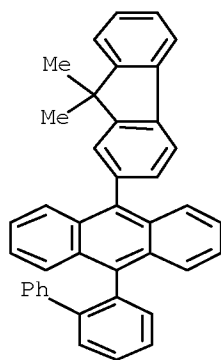
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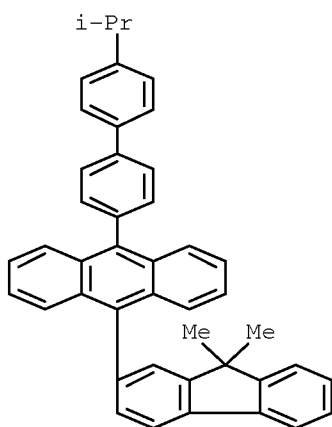
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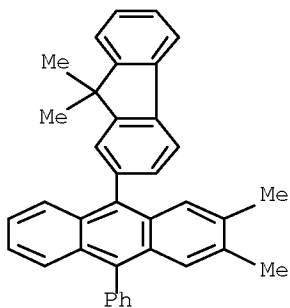
RN 400605-92-7 HCAPLUS  
 CN Anthracene, 9-[1,1'-biphenyl]-2-yl-10-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



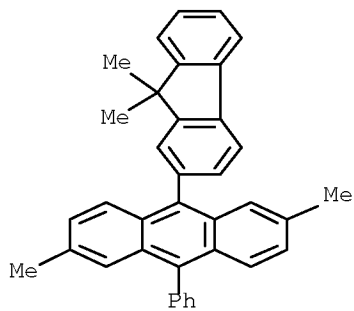
RN 400605-94-9 HCAPLUS  
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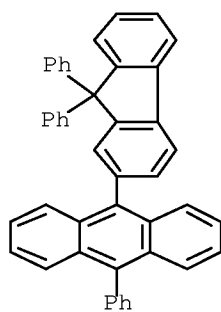
RN 400605-96-1 HCAPLUS  
 CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-2,3-dimethyl-10-phenyl- (CA INDEX NAME)



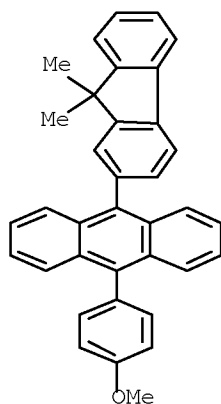
RN 400605-97-2 HCAPLUS  
 CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-2,6-dimethyl-10-phenyl- (CA INDEX NAME)



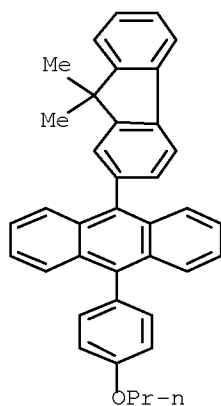
RN 400605-99-4 HCAPLUS  
 CN Anthracene, 9-(9,9-diphenyl-9H-fluoren-2-yl)-10-phenyl- (CA INDEX NAME)



RN 400606-00-0 HCAPLUS  
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 INDEX NAME)

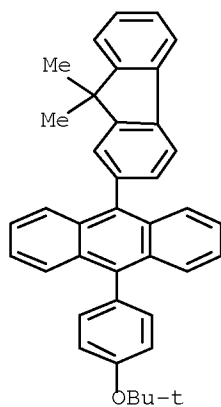


RN 400606-02-2 HCAPLUS  
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 INDEX NAME)

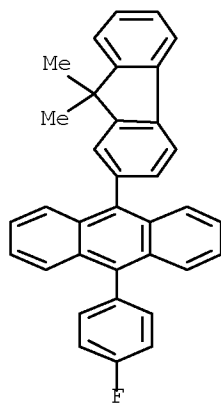




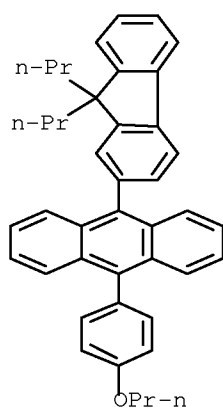
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 CN Anthracene, 9-[4-(1,1-dimethylethoxy)phenyl]-10-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



RN 400606-04-4 HCAPLUS  
 CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-(4-fluorophenyl)- (CA INDEX NAME)

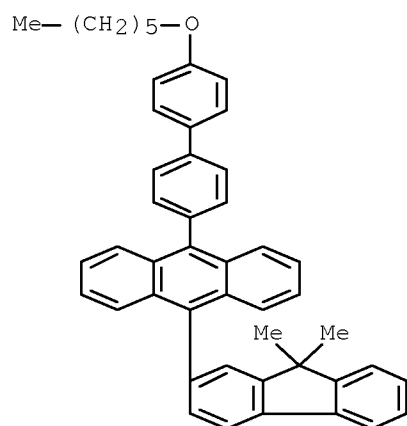


RN 400606-06-6 HCAPLUS  
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RN 400606-08-8 HCAPLUS

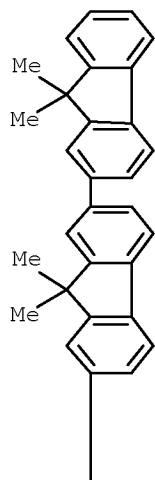
CN Anthracene, 9-(9,9-dimethyl-9H-fluoren-2-yl)-10-[4'-(hexyloxy)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



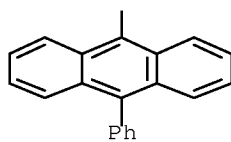
RN 400606-14-6 HCAPLUS

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PAGE 1-A

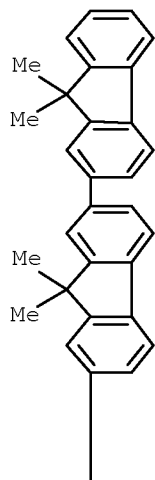


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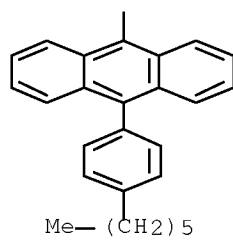


RN 400606-15-7 HCAPLUS  
CN Anthracene, 9-(4-hexylphenyl)-10-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl)- (CA INDEX NAME)

PAGE 1-A

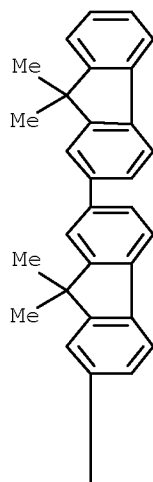


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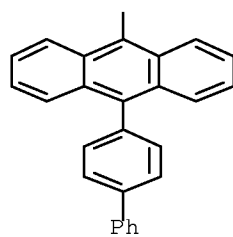


RN 400606-17-9 HCAPLUS  
CN Anthracene, 9-[1,1'-biphenyl]-4-yl-10-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl)- (CA INDEX NAME)

PAGE 1-A

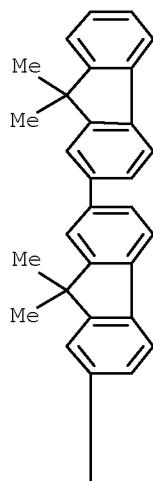


PAGE 2-A

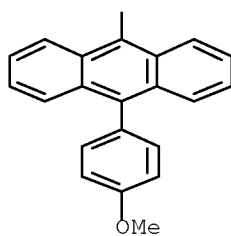


RN 400606-18-0 HCAPLUS  
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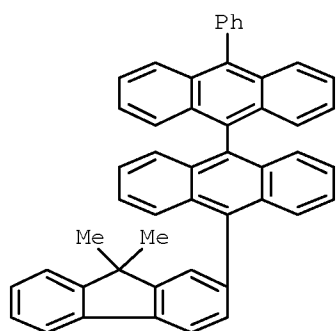
PAGE 1-A



PAGE 2-A

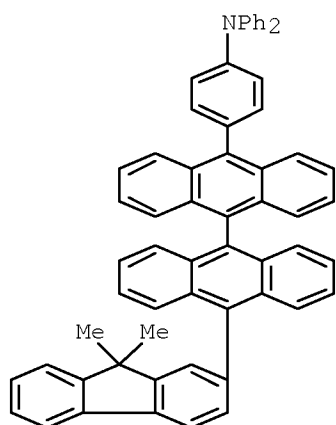


RN 400606-19-1 HCAPLUS  
 CN 9,9'-Bianthracene, 10-(9,9-dimethyl-9H-fluoren-2-yl)-10'-phenyl- (CA INDEX NAME)



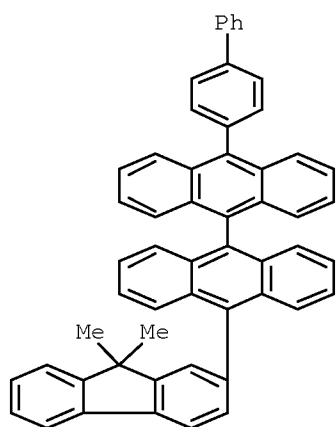
RN 400606-20-4 HCAPLUS

CN Benzenamine, 4-[10'-(9,9-dimethyl-9H-fluoren-2-yl)][9,9'-bianthracen]-10-yl]-N,N-diphenyl- (CA INDEX NAME)



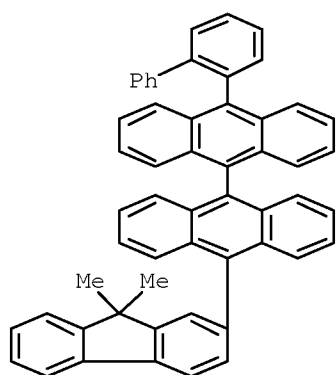
RN 400606-21-5 HCAPLUS

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



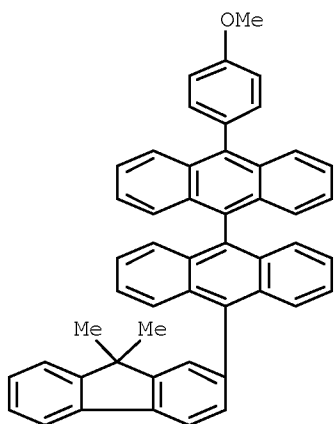
RN 400606-22-6 HCAPLUS

CN 9,9'-Bianthrane, 10-[1,1'-biphenyl]-2-yl-10'-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



RN 400606-23-7 HCAPLUS

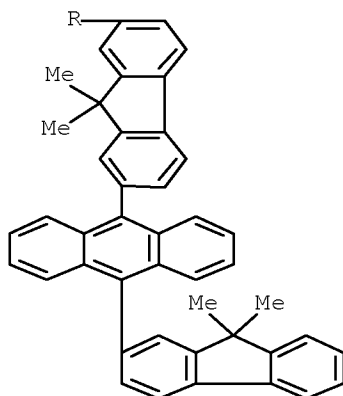
CN 9,9'-Bianthrane, 10-(9,9-dimethyl-9H-fluoren-2-yl)-10'-(4-methoxyphenyl)- (CA INDEX NAME)



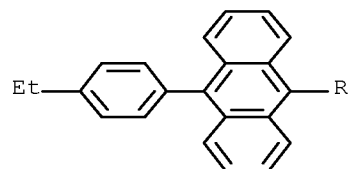
RN 400606-26-0 HCAPLUS

CN Anthracene, 9-[7-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]-10-(4-ethylphenyl)- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

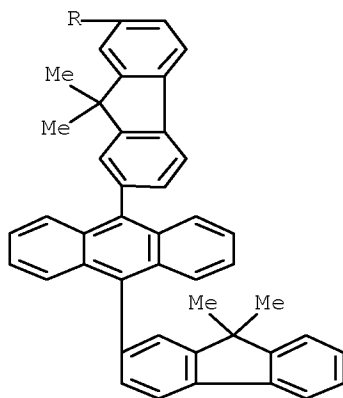


RN 400606-28-2 HCAPLUS

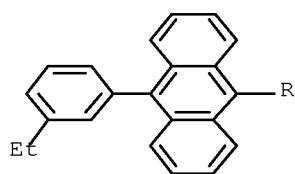
CN Anthracene, 9-[7-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]-10-(3-ethylphenyl)- (CA INDEX NAME)



PAGE 1-A

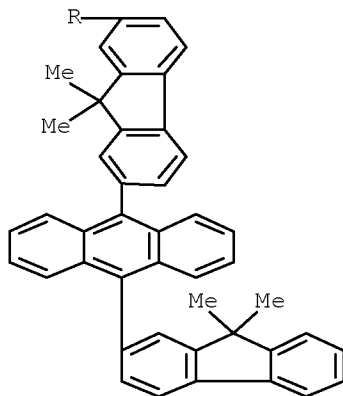


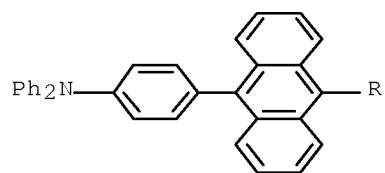
PAGE 2-A



RN 400606-30-6 HCAPLUS  
CN Benzenamine, 4-[10-[7-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-  
9,9-dimethyl-9H-fluoren-2-yl]-9-anthracenyl]-N,N-diphenyl- (CA INDEX  
NAME)

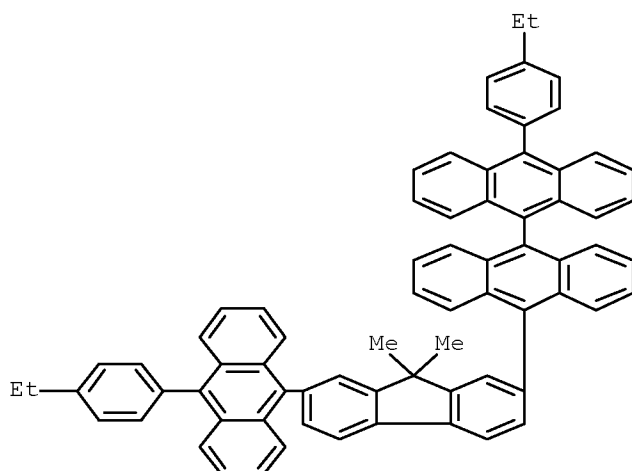
PAGE 1-A





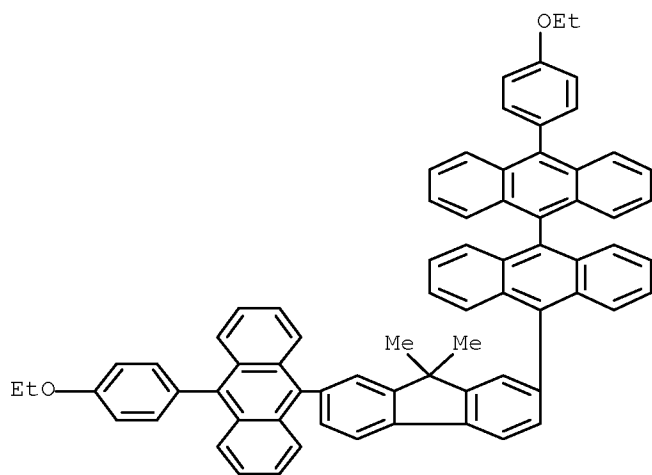
RN 400606-39-5 HCAPLUS

CN 9,9'-Bianthracene, 10-(4-ethylphenyl)-10'-[7-[10-(4-ethylphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)



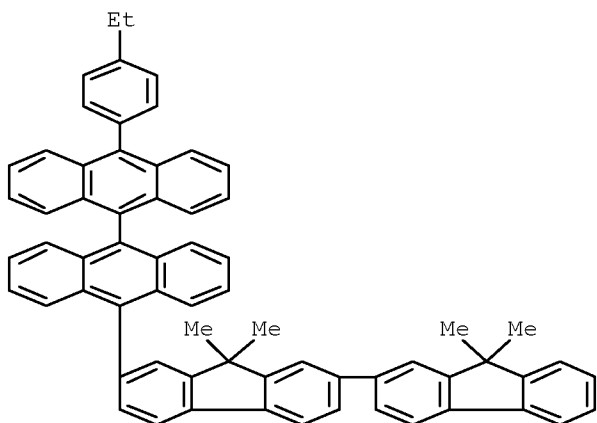
RN 400606-41-9 HCAPLUS

CN 9,9'-Bianthracene, 10-(4-ethoxyphenyl)-10'-[7-[10-(4-ethoxyphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)



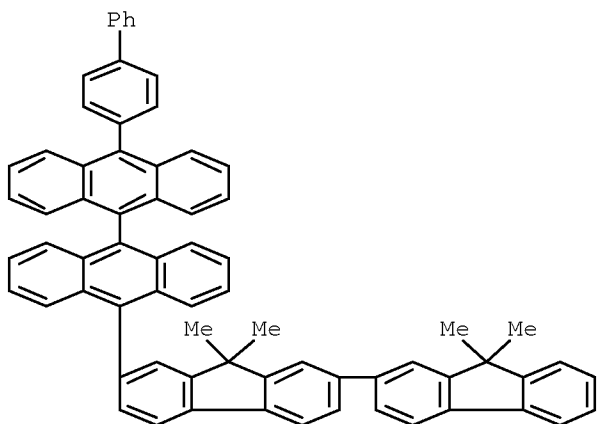
RN 400606-43-1 HCAPLUS

CN 9,9'-Bianthracene, 10-(4-ethylphenyl)-10'-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl)- (CA INDEX NAME)



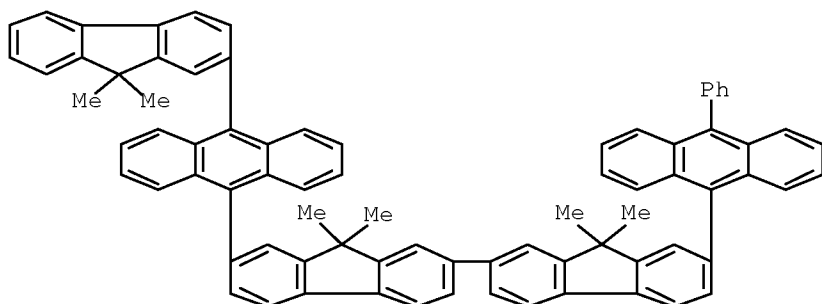
RN 400606-47-5 HCAPLUS

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl)- (CA INDEX NAME)



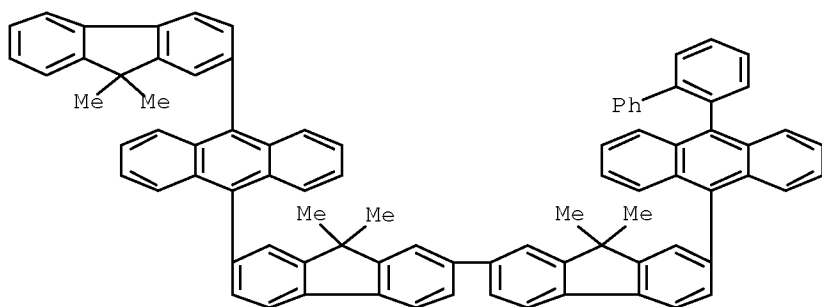
RN 400606-48-6 HCAPLUS

CN Anthracene, 9-[7'-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl]-10-phenyl- (CA INDEX NAME)

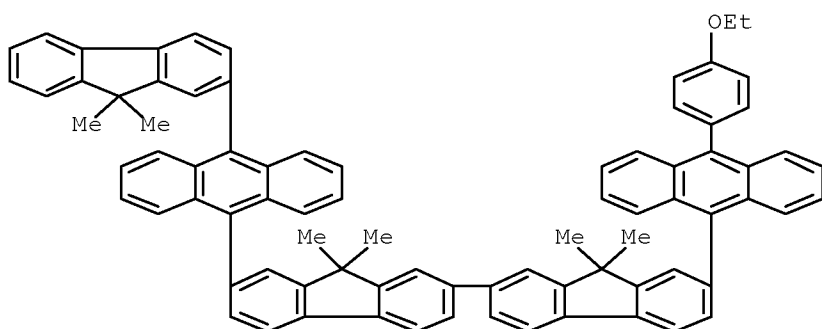


RN 400606-49-7 HCAPLUS

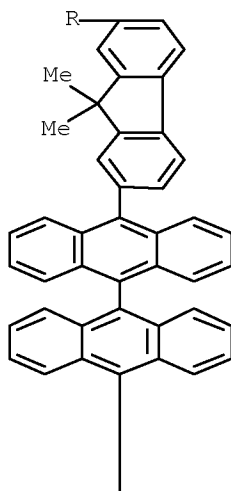
CN Anthracene, 9-[7'-(10-[1,1'-biphenyl]-2-yl-9-anthracenyl)-9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl]-10-(9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



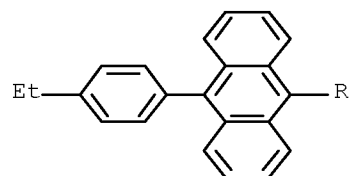
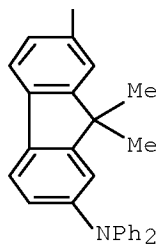
RN 400606-50-0 HCAPLUS  
 CN Anthracene, 9-[7'-[10-(9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-  
 9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl]-10-(4-ethoxyphenyl)- (CA  
 INDEX NAME)



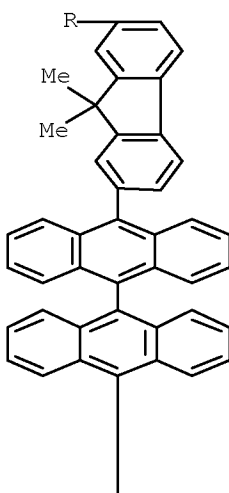
RN 400606-53-3 HCAPLUS  
 CN 9H-Fluoren-2-amine, 7-[10'-[7-[10-(4-ethylphenyl)-9-anthracenyl]-9,9-  
 dimethyl-9H-fluoren-2-yl][9,9'-bianthracen]-10-yl]-9,9-dimethyl-N,N-  
 diphenyl- (CA INDEX NAME)

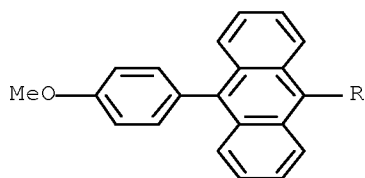
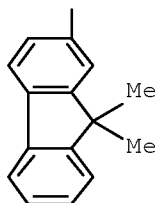


PAGE 1-A



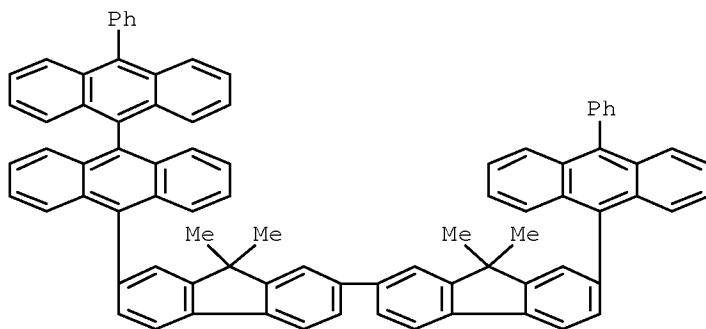
RN 400606-55-5 HCAPLUS  
 CN 9,9'-Bianthracene, 10-(9,9-dimethyl-9H-fluoren-2-yl)-10'-[7-[10-(4-methoxyphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (CA INDEX NAME)





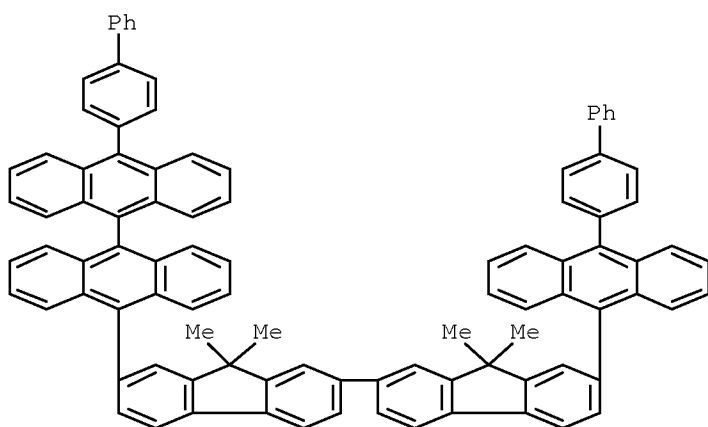
RN 400606-56-6 HCAPLUS

CN 9,9'-Bianthracene, 10-phenyl-10'-[9,9,9',9'-tetramethyl-7'-(10-phenyl-9-anthracenyl)[2,2'-bi-9H-fluoren]-7-yl]- (CA INDEX NAME)



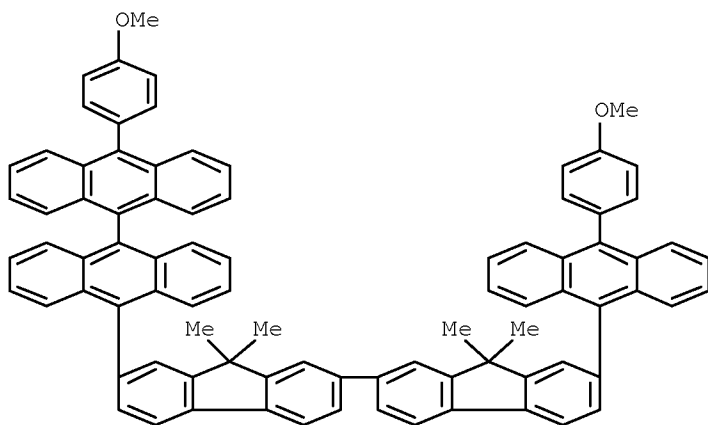
RN 400606-57-7 HCAPLUS

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-[7'-(10-[1,1'-biphenyl]-4-yl-9-anthracenyl)-9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl]- (9CI)  
(CA INDEX NAME)



RN 400606-58-8 HCAPLUS

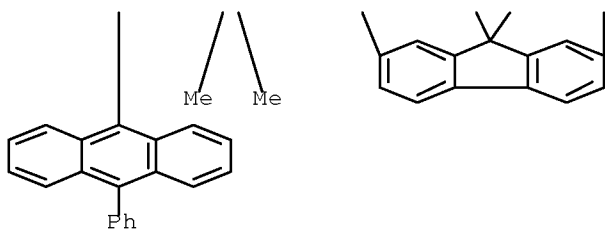
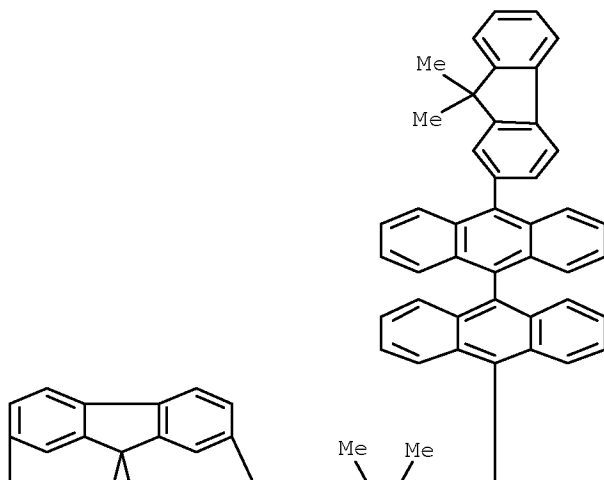
CN 9,9'-Bianthracene, 10-(4-methoxyphenyl)-10'-[7'-[10-(4-methoxyphenyl)-9-anthracenyl]-9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl]- (CA INDEX NAME)



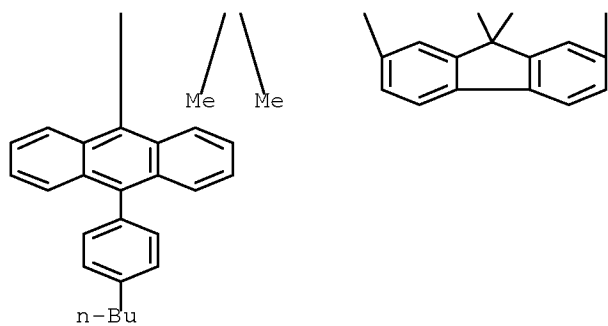
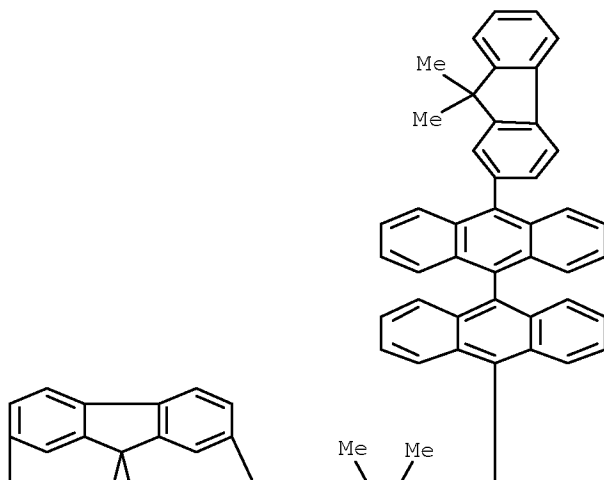
RN 400606-59-9 HCAPLUS

CN 9,9'-Bianthracene, 10-(9,9-dimethyl-9H-fluoren-2-yl)-10'-[9,9,9',9'-tetramethyl-7'-(10-phenyl-9-anthracenyl)[2,2'-bi-9H-fluoren]-7-yl]- (CA INDEX NAME)

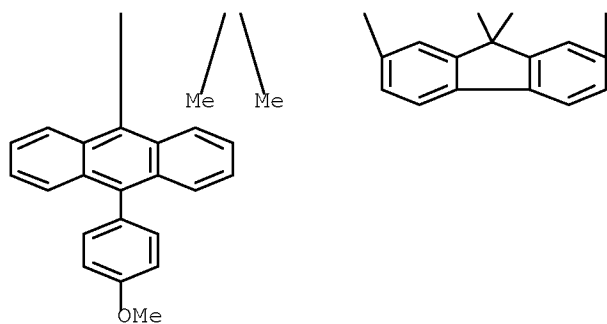
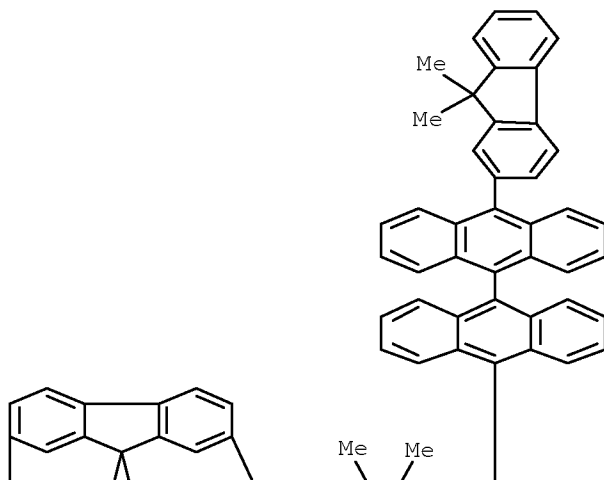




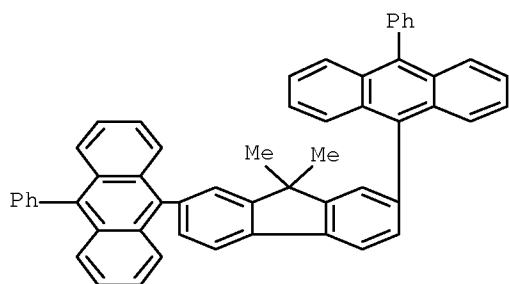
RN 400606-60-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10-[7'-[10-(4-butylphenyl)-9-anthracenyl]-9,9,9',9'-  
 tetramethyl[2,2'-bi-9H-fluoren]-7-yl]-10'-(9,9-dimethyl-9H-fluoren-2-yl)-  
 (CA INDEX NAME)



RN 400606-61-3 HCAPLUS  
 CN 9,9'-Bianthracene, 10-(9,9-dimethyl-9H-fluoren-2-yl)-10'-[7'-[10-(4-methoxyphenyl)-9-anthracenyl]-9,9,9',9'-tetramethyl[2,2'-bi-9H-fluoren]-7-yl]- (CA INDEX NAME)

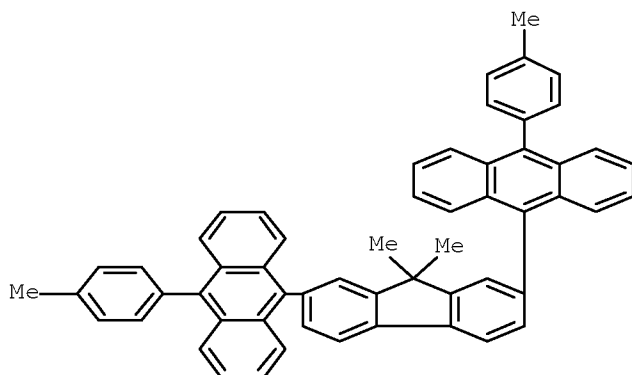


RN 400606-62-4 HCAPLUS  
 CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-phenyl- (CA  
 INDEX NAME)



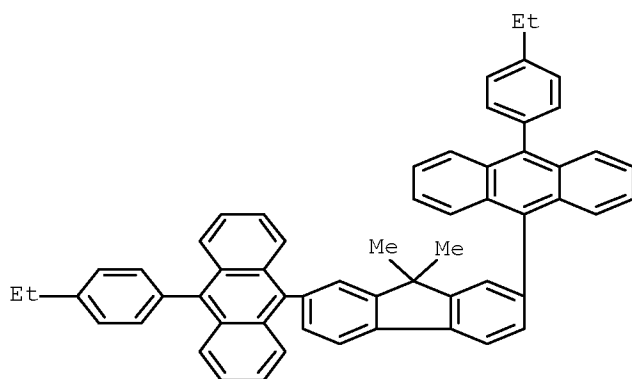
RN 400606-63-5 HCAPLUS

CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(4-methylphenyl)- (CA INDEX NAME)



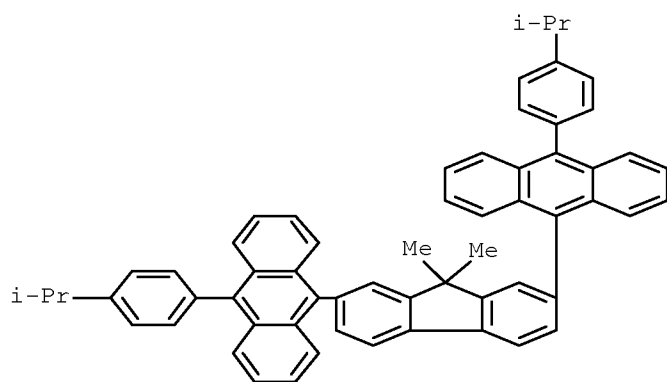
RN 400606-65-7 HCAPLUS

CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(4-ethylphenyl)- (CA INDEX NAME)



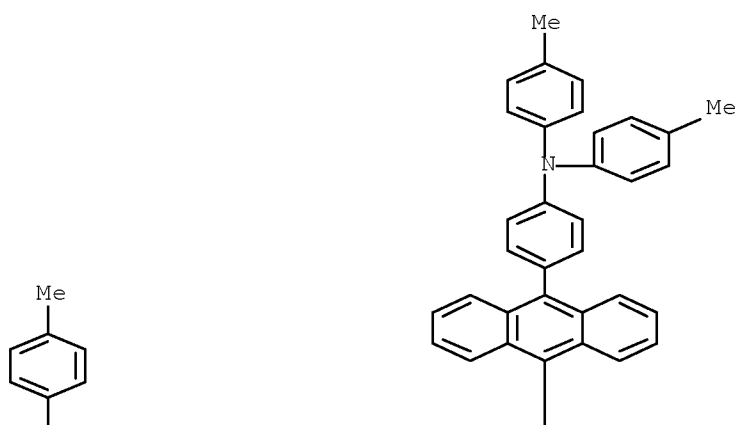
RN 400606-66-8 HCAPLUS

CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[4-(1-methylethyl)phenyl]- (CA INDEX NAME)

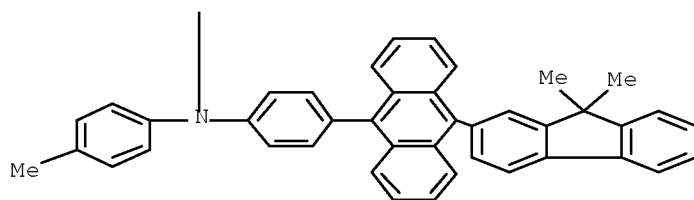


RN 400606-67-9 HCAPLUS  
 CN Benzenamine, 4,4'-[(9,9-dimethyl-9H-fluorene-2,7-diyl)di-10,9-anthracenediyl]bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

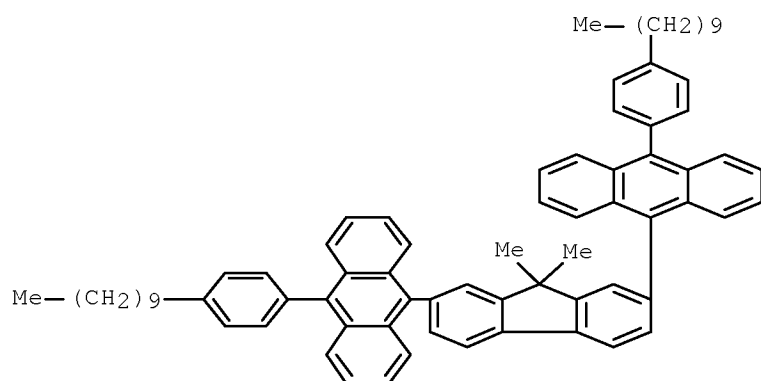


PAGE 2-A



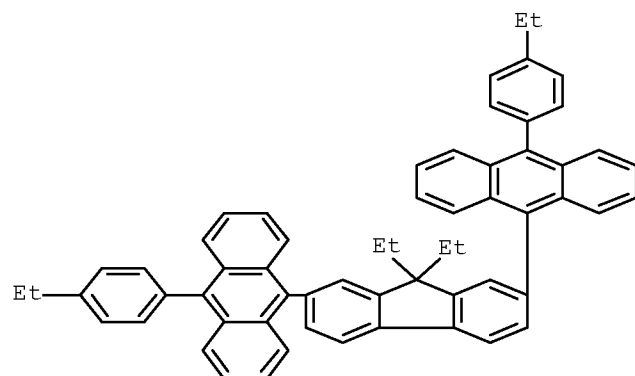
RN 400606-68-0 HCAPLUS  
 CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(4-decylphenyl)-

(CA INDEX NAME)



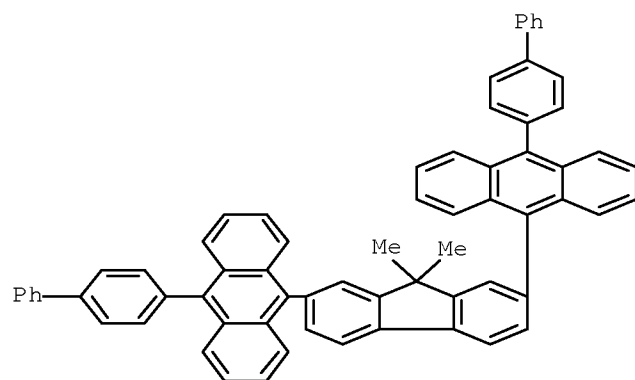
RN 400606-69-1 HCAPLUS

CN Anthracene, 9,9'-(9,9-diethyl-9H-fluorene-2,7-diyl)bis[10-(4-ethylphenyl)-4-yl-]  
(CA INDEX NAME)

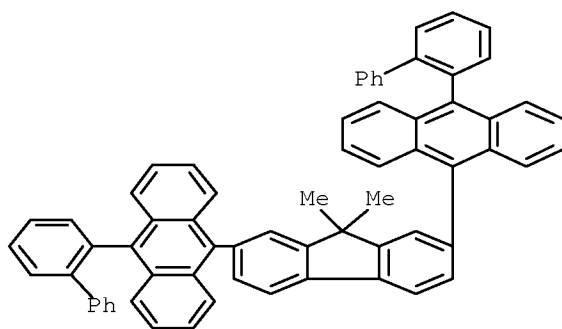


RN 400606-71-5 HCAPLUS

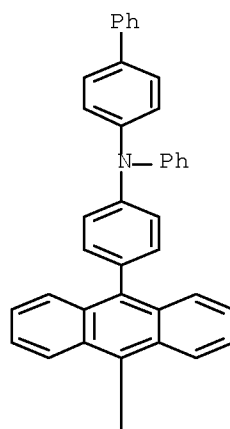
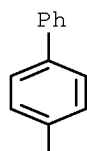
CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(1,1'-biphenyl)-4-yl-]  
(CA INDEX NAME)



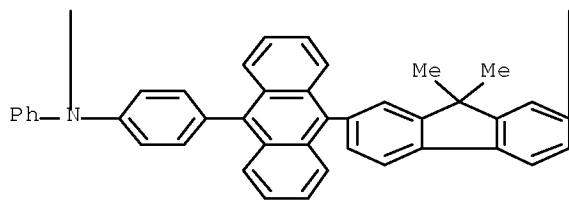
RN 400606-72-6 HCAPLUS  
 CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[1,1'-biphenyl]-2-yl- (CA INDEX NAME)



RN 400606-73-7 HCAPLUS  
 CN [1,1'-Biphenyl]-4-amine, N,N'-[(9,9-dimethyl-9H-fluorene-2,7-diyl)bis(10,9-anthracenediyl-4,1-phenylene)]bis[N-phenyl- (9CI) (CA INDEX NAME)

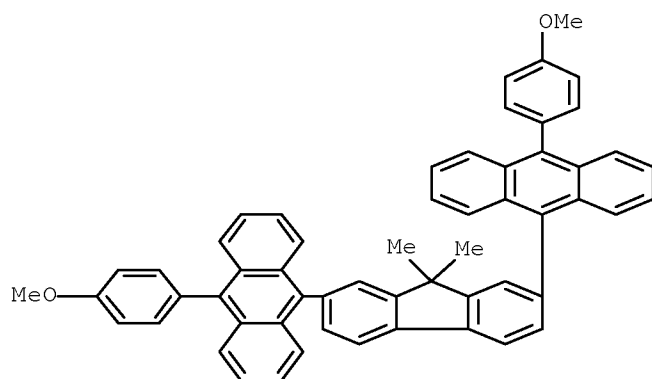


PAGE 1-A



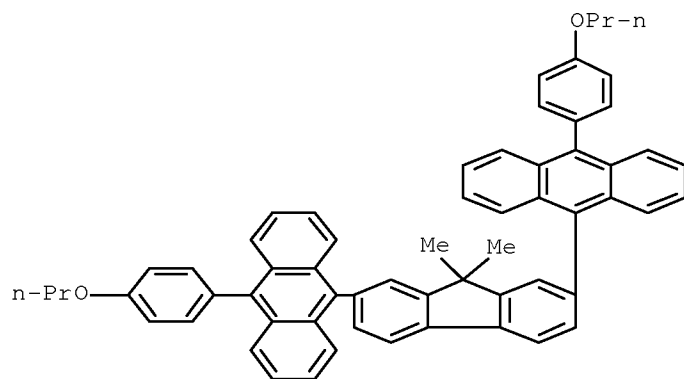
RN 400606-74-8 HCAPLUS

CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(4-methoxyphenyl)- (CA INDEX NAME)



RN 400606-75-9 HCAPLUS

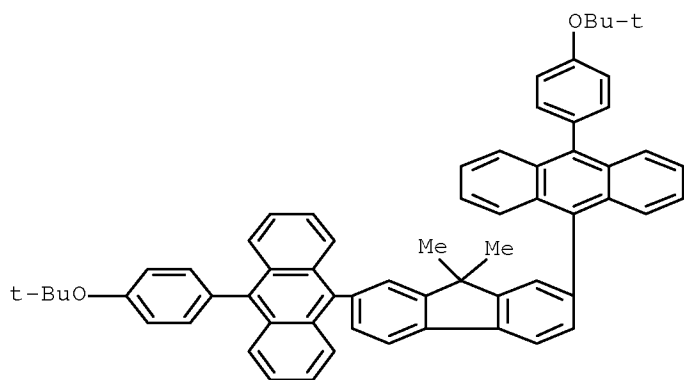
CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(4-propoxyphenyl)- (CA INDEX NAME)



RN 400606-76-0 HCAPLUS

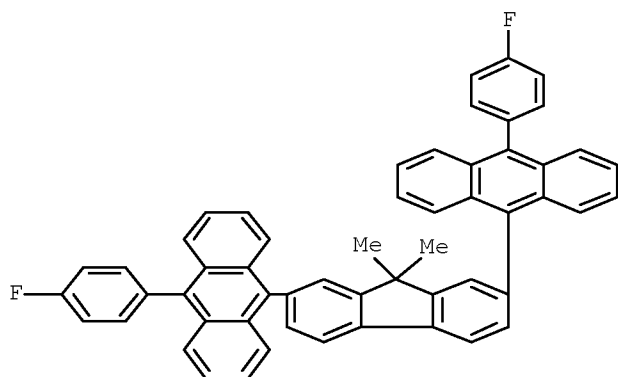
CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[4-(1,1-dimethylethoxy)phenyl]- (CA INDEX NAME)





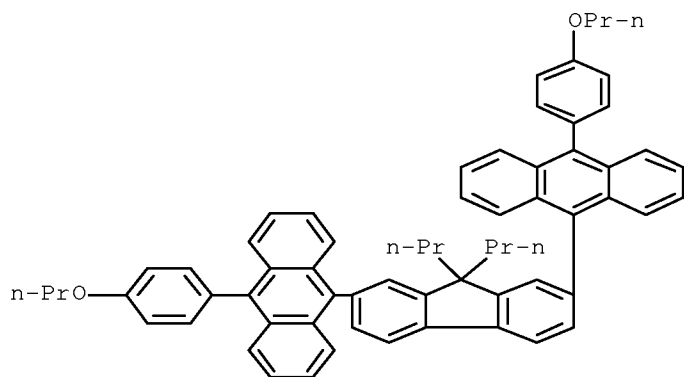
RN 400606-77-1 HCAPLUS

CN Anthracene, 9,9'-(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-(4-fluorophenyl)- (CA INDEX NAME)



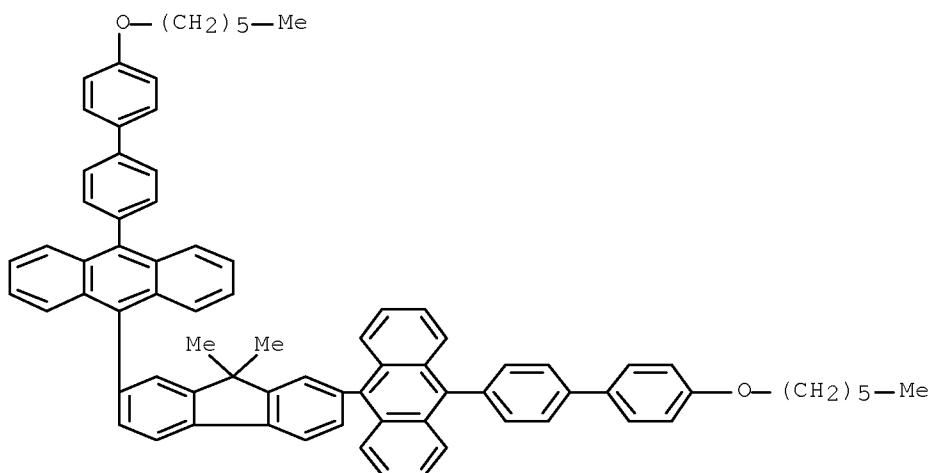
RN 400606-78-2 HCAPLUS

CN Anthracene, 9,9'-(9,9-dipropyl-9H-fluorene-2,7-diyl)bis[10-(4-propoxyphenyl)- (CA INDEX NAME)



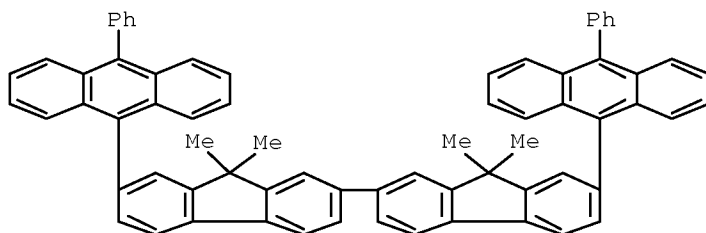
RN 400606-80-6 HCAPLUS

CN Anthracene, 9,9'--(9,9-dimethyl-9H-fluorene-2,7-diyl)bis[10-[4'-(hexyloxy)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



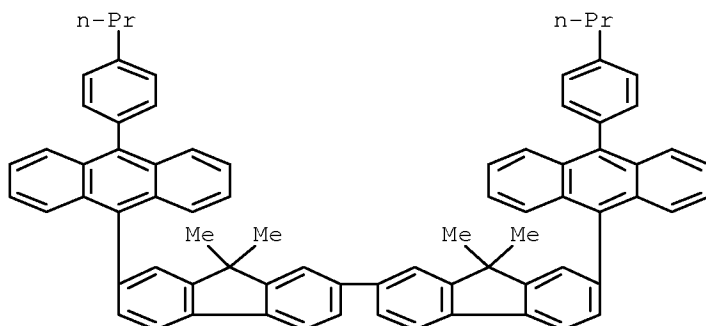
RN 400606-87-3 HCAPLUS

CN Anthracene, 9,9'--(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluorene]-7,7'-diyl)bis[10-phenyl- (9CI) (CA INDEX NAME)



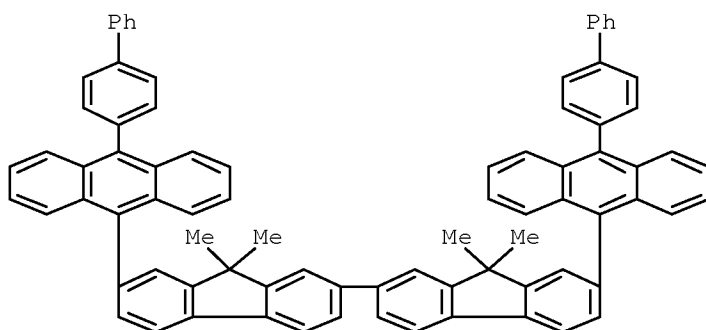
RN 400606-88-4 HCAPLUS

CN Anthracene, 9,9'--(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluorene]-7,7'-diyl)bis[10-(4-propylphenyl)- (9CI) (CA INDEX NAME)



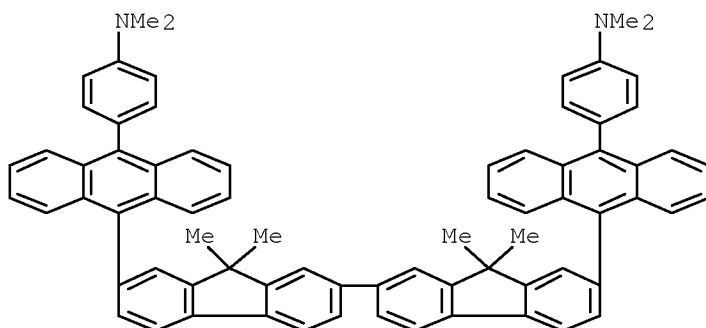
RN 400606-89-5 HCAPLUS

CN Anthracene, 9,9'-(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluorene]-7,7'-diyl)bis[10-[1,1'-biphenyl]-4-yl- (9CI) (CA INDEX NAME)



RN 400606-90-8 HCAPLUS

CN Benzenamine, 4,4'-[(9,9,9',9'-tetramethyl[2,2'-bi-9H-fluorene]-7,7'-diyl)di-10,9-anthracenediyl]bis[N,N-dimethyl- (9CI) (CA INDEX NAME)



IT 400607-17-2 400607-18-3 400607-19-4

400607-23-0 400607-24-1 400607-38-7

400607-39-8 400607-66-1 400607-71-8

400607-72-9 400607-73-0 400607-75-2

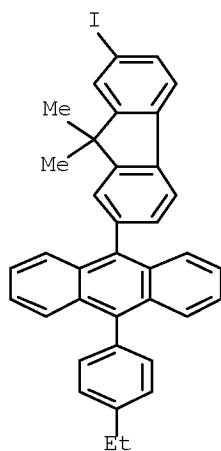
400607-78-5 400607-79-6 400607-80-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of hydrocarbon compound for organic electroluminescent devices)

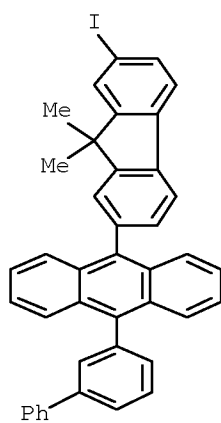
RN 400607-17-2 HCAPLUS

CN Anthracene, 9-(4-ethylphenyl)-10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



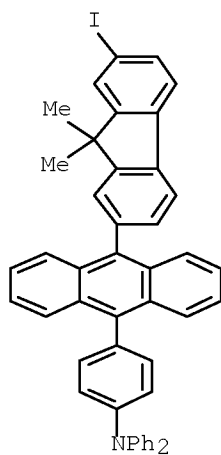
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CN Anthracene, 9-[1,1'-biphenyl]-3-yl-10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



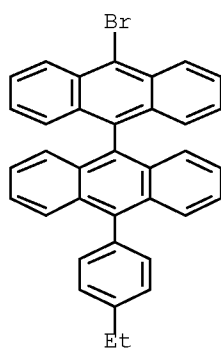
RN 400607-19-4 HCAPLUS

CN Benzenamine, 4-[10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)-9-anthracenyl]-N,N-diphenyl- (CA INDEX NAME)



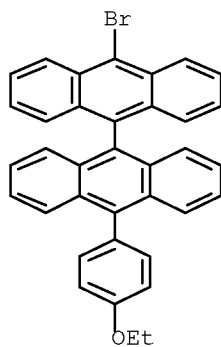
RN 400607-23-0 HCAPLUS

CN 9,9'-Bianthracene, 10-bromo-10'-(4-ethylphenyl)- (CA INDEX NAME)



RN 400607-24-1 HCAPLUS

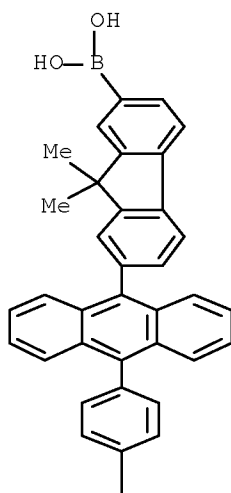
CN 9,9'-Bianthracene, 10-bromo-10'-(4-ethoxyphenyl)- (CA INDEX NAME)



RN 400607-38-7 HCAPLUS

CN Boronic acid, [7-[10-(4-ethylphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A

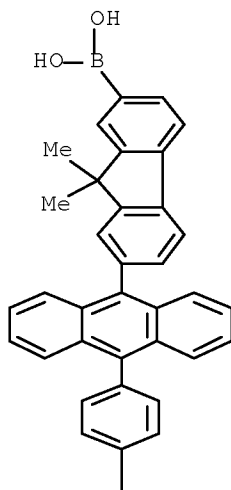


PAGE 2-A



RN 400607-39-8 HCAPLUS  
CN Boronic acid, [7-[10-(4-ethoxyphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

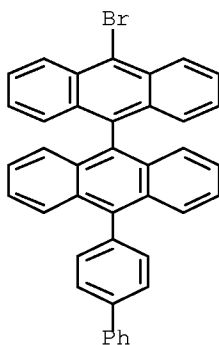
PAGE 1-A





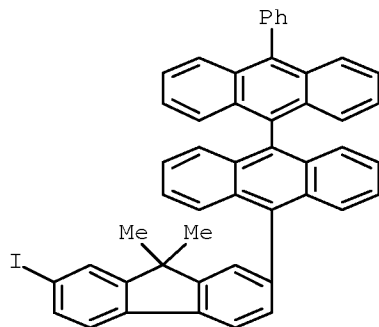
RN 400607-66-1 HCAPLUS

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-bromo- (CA INDEX NAME)



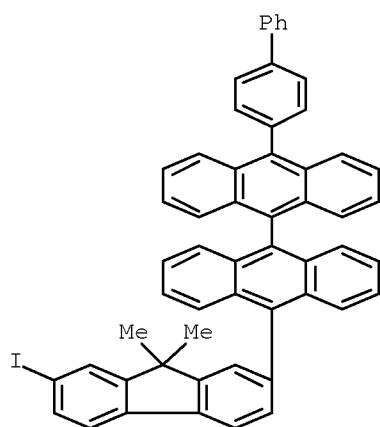
RN 400607-71-8 HCAPLUS

CN 9,9'-Bianthracene, 10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)-10'-phenyl- (CA INDEX NAME)



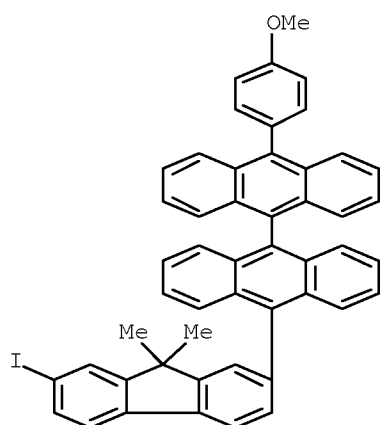
RN 400607-72-9 HCAPLUS

CN 9,9'-Bianthracene, 10-[1,1'-biphenyl]-4-yl-10'-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)- (CA INDEX NAME)



RN 400607-73-0 HCAPLUS

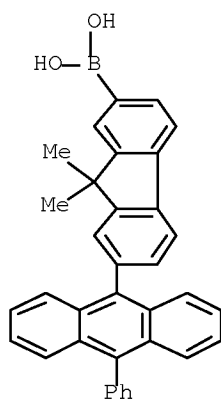
CN 9,9'-Bianthrane, 10-(7-iodo-9,9-dimethyl-9H-fluoren-2-yl)-10'-(4-methoxyphenyl)- (CA INDEX NAME)



RN 400607-75-2 HCAPLUS

CN Boronic acid, [9,9-dimethyl-7-(10-phenyl-9-anthracenyl)-9H-fluoren-2-yl]-(9CI) (CA INDEX NAME)

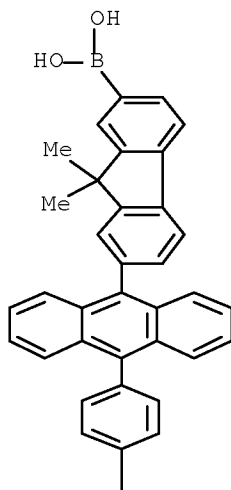




RN 400607-78-5 HCAPLUS

CN Boronic acid, [7-[10-(4-methoxyphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A



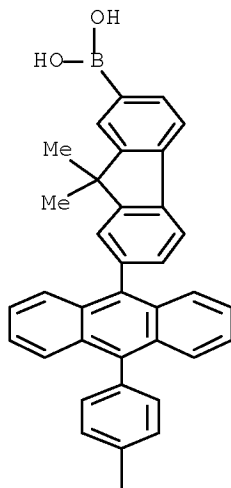
PAGE 2-A



RN 400607-79-6 HCAPLUS

CN Boronic acid, [7-(10-[1,1'-biphenyl]-4-yl-9-anthracenyl)-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A

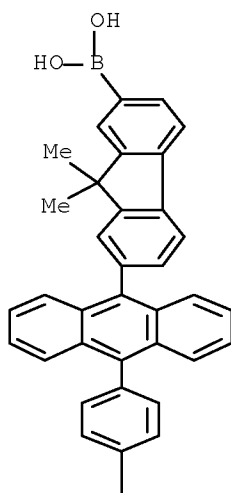


PAGE 2-A



RN 400607-80-9 HCAPLUS  
CN Boronic acid, [7-[10-(4-butylphenyl)-9-anthracenyl]-9,9-dimethyl-9H-fluoren-2-yl]- (9CI) (CA INDEX NAME)

PAGE 1-A



n-Bu

OSC.G 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (23 CITINGS)  
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 25 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2001:748181 HCAPLUS Full-text  
 DN 135:296018  
 TI Organic electroluminescence device and organic luminescent medium  
 IN Fukuoka, Kenichi; Hosokawa, Chishio  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO PCT Int. Appl., 60 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001076323	A1	20011011	WO 2001-JP2587	20010328 <--
	W: CN, IN, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2001284050	A	20011012	JP 2000-93976	20000330 <--
	JP 4094203	B2	20080604		
	EP 1191822	A1	20020327	EP 2001-917561	20010328 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 100482021	C	20090422	CN 2001-800784	20010328 <--
	US 20020048688	A1	20020425	US 2001-819663	20010329 <--
	US 6713192	B2	20040330		
	TW 490992	B	20020611	TW 2001-90107549	20010329 <--
	IN 2001CN01672	A	20070907	IN 2001-CN1672	20011128 <--
	IN 223482	A1	20081121		
PRAI	JP 2000-93976	A	20000330		
	WO 2001-JP2587	W	20010328		

## ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 135:296018

AB The invention relates to an organic electroluminescence device having a pair of electrodes and an organic luminescent medium layer held between them, wherein the organic luminescent medium layer at least contains an electron-transporting compound and an anthracene derivative of a specific structure, and has excellent heat resistance, long life, and the efficiency of luminescence is high. An organic luminescent medium preferably used for such an electroluminescence device is also disclosed.

IT 23102-67-2 172285-82-4 364765-14-0

RL: DEV (Device component use); USES (Uses)

(organic electroluminescence device having organic luminescent medium layer of)

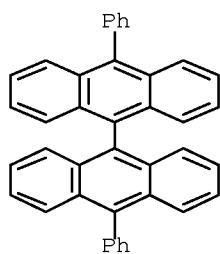
IT 23102-67-2 172285-82-4 364765-14-0

RL: DEV (Device component use); USES (Uses)

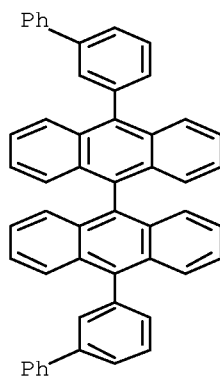
(organic electroluminescence device having organic luminescent medium layer of)

RN 23102-67-2 HCAPLUS

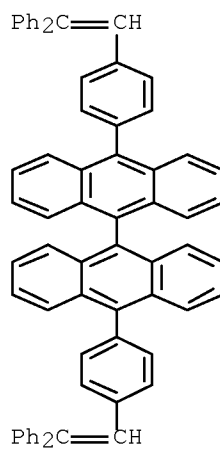
CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



RN 172285-82-4 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-3-yl)- (CA INDEX NAME)



RN 364765-14-0 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis[4-(2,2-diphenylethenyl)phenyl]- (CA INDEX NAME)



RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 26 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
AN 2001:730670 HCAPLUS Full-text  
DN 135:280171  
TI Anthracene derivatives and organic electroluminescent devices made by  
using the same  
IN Hosokawa, Chishio; Ikeda, Hidetsugu; Funahashi, Masakazu  
PA Idemitsu Kosan Co., Ltd., Japan  
SO PCT Int. Appl., 71 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2001072673	A1	20011004	WO 2001-JP2330	20010323 <--
	W: CN, IN, JP, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				
	PT, SE, TR				
	EP 1182183	A1	20020227	EP 2001-915727	20010323 <--
	EP 1182183	B1	20091209		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, FI, CY, TR				
	CN 1226250	C	20051109	CN 2001-800733	20010323 <--
	CN 1754877	A	20060405	CN 2005-10106888	20010323 <--
	AT 451344	T	20091215	AT 2001-915727	20010323 <--
	US 20020048687	A1	20020425	US 2001-818846	20010328 <--
	TW 574342	B	20040201	TW 2001-90107379	20010328 <--
	KR 843819	B1	20080703	KR 2001-714307	20011109 <--
	IN 2001CN01650	A	20070907	IN 2001-CN1650	20011126 <--
	IN 221280	A1	20080801		
	US 20040100188	A1	20040527	US 2003-610930	20030702
	US 6797848	B2	20040928		
PRAI	JP 2000-90644	A	20000329		
	JP 2000-319297	A	20001019		
	CN 2001-800733	A3	20010323		
	WO 2001-JP2330	W	20010323		
	US 2001-818846	B1	20010328		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 135:280171

AB Anthracene derivs. (I); and organic electroluminescent(EL) devices each having  
at least an organic light-emitting layer sandwiched between a pair of  
electrodes and containing the derivs. [wherein X and Y are each a trivalent  
group derived from an aromatic ring; (1) A1 to A4 are each aryl or a  
monovalent heterocyclic group or (2) A1 and A3 are each H, and A2 and A4 are  
each styryl whose Ph moiety may be substituted and which may be substituted by  
C1-30 alkyl at the  $\alpha$ - or  $\beta$ -position; R1 to R16 are each H, halo, cyano, nitro,  
alkyl, or the like; Q is arylene or the like; and p is 0, 1, or 2]. The  
anthracene derivs. exhibit high light emitting efficiency and heat resistance,  
when used as the light-emitting constituent of organic EL devices.

IT 231606-50-1 363609-60-3 363609-61-4  
363609-62-5 363609-63-6 363609-64-7  
363609-65-8 363609-67-0 363609-68-1  
363609-69-2 363609-70-5 363609-71-6  
363609-72-7

RL: DEV (Device component use); USES (Uses)

(anthracene derivs. and organic electroluminescent devices made by using  
the same)

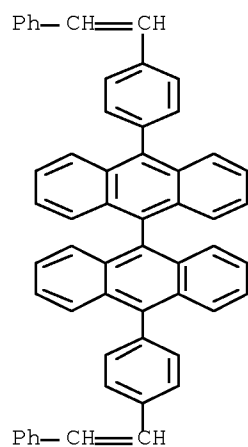
IT 231606-50-1 363609-60-3 363609-61-4  
 363609-62-5 363609-63-6 363609-64-7  
 363609-65-8 363609-67-0 363609-68-1  
 363609-69-2 363609-70-5 363609-71-6  
 363609-72-7

RL: DEV (Device component use); USES (Uses)

(anthracene derivs. and organic electroluminescent devices made by using the same)

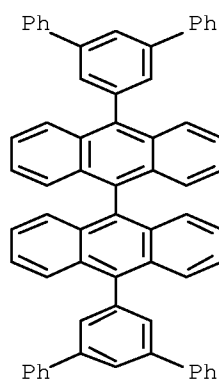
RN 231606-50-1 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



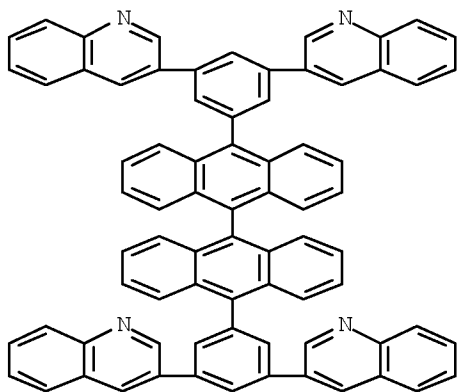
RN 363609-60-3 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1':3',1''-terphenyl]-5'-yl)- (CA INDEX NAME)



RN 363609-61-4 HCAPLUS

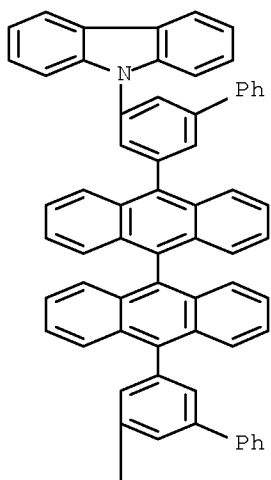
CN Quinoline, 3,3',3'',3'''-([9,9'-bianthracene]-10,10'-diyl-di-5,1,3-benzenetriyl)tetrakis- (9CI) (CA INDEX NAME)



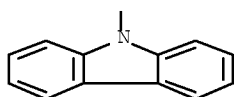
RN 363609-62-5 HCAPLUS

CN 9H-Carbazole, 9,9'-bis(5,3'-biphenyl-5-ylidene)- (9CI) (CA INDEX NAME)

PAGE 1-A

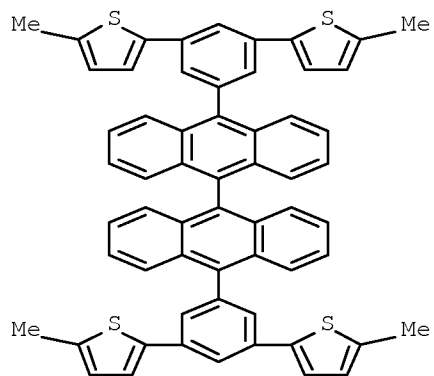


PAGE 2-A



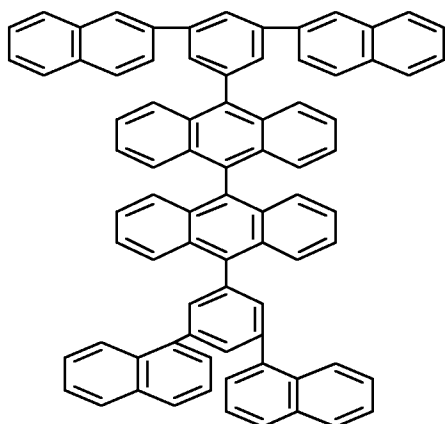
RN 363609-63-6 HCAPLUS

CN Thiophene, 2,2',2'',2'''-([9,9'-bianthracene]-10,10'-diyl-di-5,1,3-benzenetriyl)tetrakis[5-methyl- (9CI) (CA INDEX NAME)



RN 363609-64-7 HCAPLUS

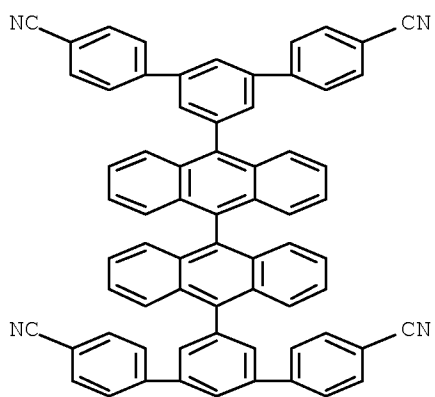
CN 9,9'-Bianthracene, 10-(3,5-di-1-naphthalenylphenyl)-10'-(3,5-di-2-naphthalenylphenyl)- (CA INDEX NAME)



RN 363609-65-8 HCAPLUS

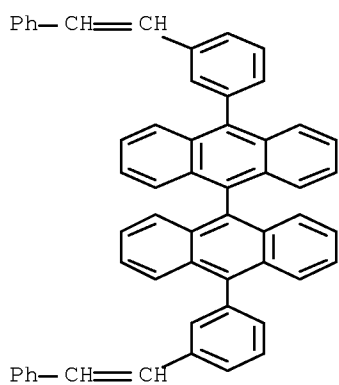
CN [1,1':3',1''-Terphenyl]-4,4''-dicarbonitrile, 5',5''''-[9,9'-bianthracene]-10,10'-diylbis- (9CI) (CA INDEX NAME)





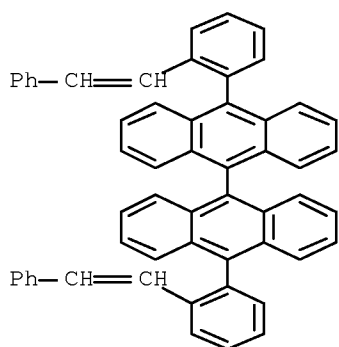
RN 363609-67-0 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis[3-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



RN 363609-68-1 HCAPLUS

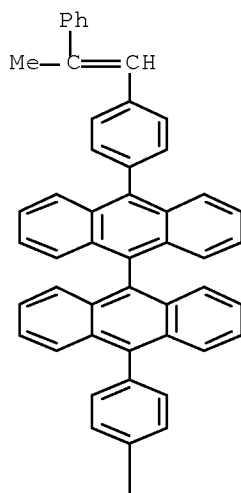
CN 9,9'-Bianthracene, 10,10'-bis[2-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



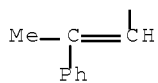
RN 363609-69-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis[4-(2-phenyl-1-propen-1-yl)phenyl]- (CA  
INDEX NAME)

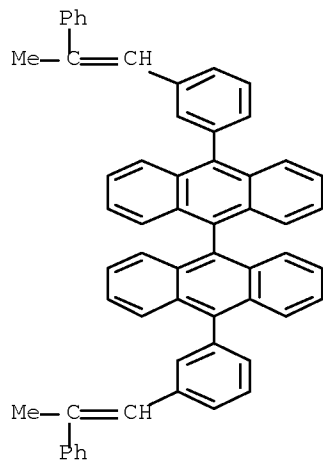
PAGE 1-A



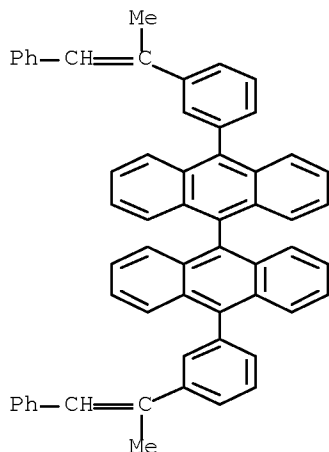
PAGE 2-A



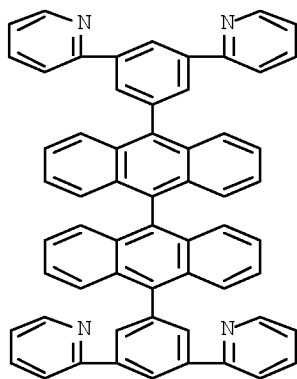
RN 363609-70-5 HCAPLUS  
CN 9,9'-Bianthracene, 10,10'-bis[3-(2-phenyl-1-propen-1-yl)phenyl]- (CA  
INDEX NAME)



RN 363609-71-6 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis[3-(1-methyl-2-phenylethenyl)phenyl]- (CA INDEX NAME)



RN 363609-72-7 HCAPLUS  
 CN Pyridine, 2,2',2'',2'''-([9,9'-bianthracene]-10,10'-diyl-di-5,1,3-benzenetriyl)tetrakis- (9CI) (CA INDEX NAME)

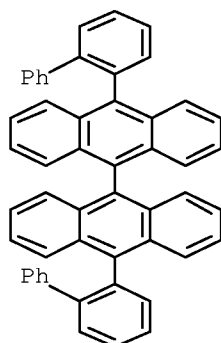


OSC.G 18 THERE ARE 18 CAPLUS RECORDS THAT CITE THIS RECORD (24 CITINGS)  
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 27 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2001:521206 HCAPLUS Full-text  
 DN 135:129391  
 TI Organic electroluminescent device  
 IN Ara, Kensuke; Fujita, Tetsushi; Saito, Shinrou; Aotani, Atsushi; Inoue, Tetsushi

PA TDK Corporation, Japan  
 SO Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001196179	A	20010719	JP 2000-2697	20000111 <--
	JP 3970495	B2	20070905		
PRAI	JP 2000-2697		20000111		
OS	MARPAT 135:129391				
AB	The invention relates to a blue-emitting organic electroluminescent device comprising the mixed organic layer containing more than one each of phenylanthracene derivs. represented by I and II [R1, R2, R3, and R4 = alkyl, cycloalkyl, aryl, etc.; r1, r2, r3, and r4 = 0-5 integers].				
IT	172285-83-5				
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent device)				
IT	172285-83-5				
	RL: DEV (Device component use); USES (Uses) (organic electroluminescent device)				
RN	172285-83-5	HCAPLUS			
CN	9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)				



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 28 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 2001:228988 HCAPLUS Full-text  
 DN 134:273305  
 TI Organic electroluminescence and organic luminous medium  
 IN Hosokawa, Chishio; Higashi, Hisahiro; Fukuoka, Kenichi; Ikeda, Hidetsugu  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO PCT Int. Appl., 41 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001021729	A1	20010329	WO 2000-JP6402	20000920 <--
	W: CN, IN, JP, KR				

RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,  
PT, SE

EP 1167488	A1	20020102	EP 2000-961101	20000920 <--
EP 1167488	B1	20070425		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI, CY

TW 474113	B	20020121	TW 2000-89119391	20000920 <--
US 6534199	B1	20030318	US 2000-665416	20000920 <--
CN 1208422	C	20050629	CN 2000-802002	20000920 <--
EP 1775783	A2	20070418	EP 2007-101123	20000920 <--
EP 1775783	A3	20080416		

R: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC,  
NL, PT, SE

AT 360892	T	20070515	AT 2000-961101	20000920 <--
IN 2001CN00687	A	20070309	IN 2001-CN687	20010518 <--
IN 212812	A1	20080215		
KR 809132	B1	20080229	KR 2001-706271	20010518 <--
JP 2006287248	A	20061019	JP 2006-144123	20060524
KR 2007042584	A	20070423	KR 2007-706875	20070326
KR 799799	B1	20080201		
KR 2007091375	A	20070910	KR 2007-719127	20070821
KR 790663	B1	20080103		
PRAI JP 1999-267460	A	19990921		
EP 2000-961101	A3	20000920		
JP 2001-525292	A3	20000920		
WO 2000-JP6402	W	20000920		
KR 2001-706271	A3	20010518		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

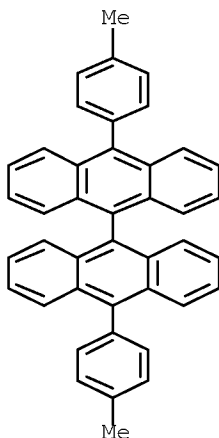
AB The invention refers to a organic electroluminescent device comprising a mono-, di- or tri- styryl amine, and at least one of the anthracene derivs., A1LA1 [A1,2 = (un)substituted mono Ph anthryl, or (un)substituted di-Ph anthryl; L = single bond or divalent chain] and A3AnA4 [An = (un)substituted anthracene; A3,4 = (un)substituted condensed aromatic ring, or (un)substituted C12+ chain uncondensed aryl ring].

IT 172285-76-6 172285-79-9 331749-32-7  
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescence and organic luminous medium)

IT 172285-76-6 172285-79-9 331749-32-7  
RL: DEV (Device component use); USES (Uses)  
(organic electroluminescence and organic luminous medium)

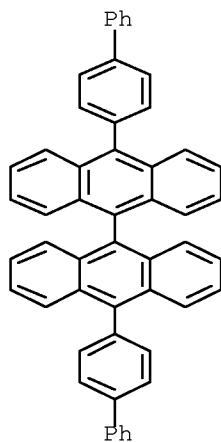
RN 172285-76-6 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis(4-methylphenyl)- (CA INDEX NAME)



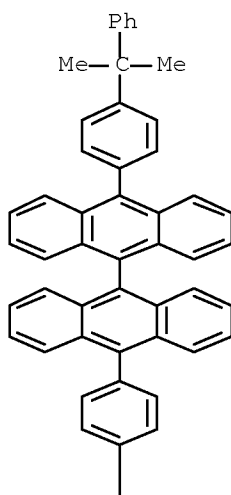
RN 172285-79-9 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

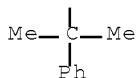


RN 331749-32-7 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis[4-(1-methyl-1-phenylethyl)phenyl]- (CA INDEX NAME)



PAGE 1-A



OSC.G 19 THERE ARE 19 CAPLUS RECORDS THAT CITE THIS RECORD (22 CITINGS)  
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 29 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2001:134037 HCAPLUS Full-text

DN 134:200267

TI Organic electroluminescent devices

IN Kobori, Isamu; Inoue, Tetsuji; Fujita, Tetsuji; Nakaya, Kenji

PA TDK Electronics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 49 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001052870	A	20010223	JP 1999-345071	19991203 <--
PRAI	JP 1999-157176	A	19990603		

OS MARPAT 134:200267

AB The devices, emitting a blue light, comprise a phosphor comprising a phenyl-anthracene derivative I(R1-4 = aryl, alkyl, alkoxy, aryloxy, halo; r1-4 = 0-5; r5-6 = 0-4).

IT 172285-83-5

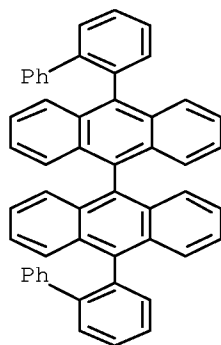
RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent devices)

IT 172285-83-5

RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent devices)

RN 172285-83-5 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L6 ANSWER 30 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2000:866419 HCAPLUS Full-text

DN 134:34919

TI Phenylanthracene derivatives for electroluminescent devices and the devices

IN Inoue, Tetsuji; Fujita, Tetsuji; Ara, Kensuke

PA TDK Electronics Co., Ltd., Japan; TDK Corporation

SO Jpn. Kokai Tokkyo Koho, 33 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2000344691	A	20001212	JP 1999-157105	19990603 <--
	JP 3838816	B2	20061025		
PRAI	JP 1999-157105		19990603		
OS	MARPAT 134:34919				

AB Phenylanthracene derivs. A1LA2 (I; A1, A2 = mono(o-substituted phenyl)anthryl, di(o-substituted phenyl)anthryl; L = direct bond, bivalent bonding group) are claimed. Markush structures for I are also given. Organic electroluminescent devices having an organic layer containing I are also claimed. The devices are suitable for use as blue light-emitting materials and as charge injection materials.

IT 172285-83-5P 312497-10-2P 312497-12-4P  
312497-14-6P 312497-18-0P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(electroluminescent devices comprising of phenylanthracene derivs.)

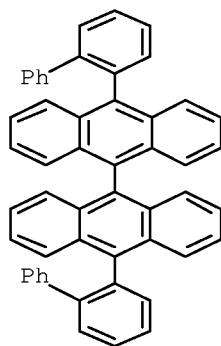
IT 172285-83-5P 312497-10-2P 312497-12-4P  
312497-14-6P 312497-18-0P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(electroluminescent devices comprising of phenylanthracene derivs.)

RN 172285-83-5 HCAPLUS

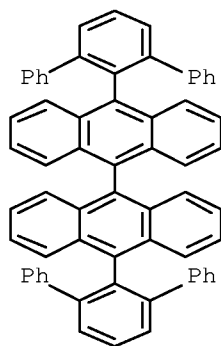
CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



RN 312497-10-2 HCAPLUS

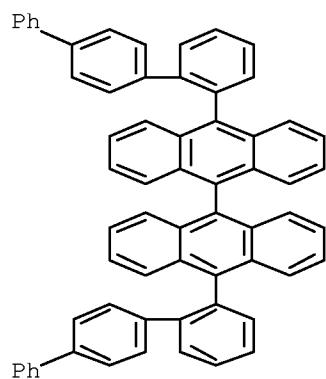
CN 9,9'-Bianthracene, 10,10'-bis([1,1':3',1''-terphenyl]-2'-yl)- (9CI) (CA INDEX NAME)





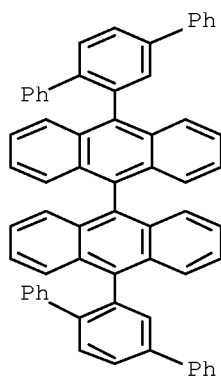
RN 312497-12-4 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1':4',1''-terphenyl]-2-yl)- (CA INDEX NAME)

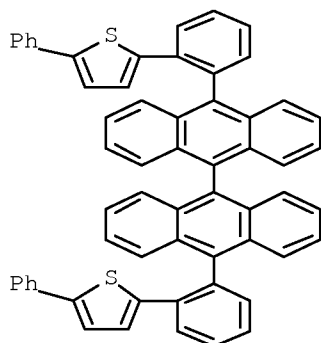


RN 312497-14-6 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis([1,1':4',1''-terphenyl]-2'-yl)- (CA INDEX NAME)



RN 312497-18-0 HCAPLUS  
CN Thiophene, 2,2'-([9,9'-bianthracene]-10,10'-diyl-di-2,1-phenylene)bis[5-phenyl- (9CI) (CA INDEX NAME)



OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

L6 ANSWER 31 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2000:208416 HCAPLUS Full-text

DN 132:334990

TI Confined conjugation for adjustable optical properties

AU Baumgarten, M.; Caparros, D.; Yuksel, T.; Karabunarliev, S.; Rettig, W.

CS Max-Planck-Institute for polymer research, Mainz, D-55128, Germany

SO Polymer Preprints (American Chemical Society, Division of Polymer

Chemistry) (2000), 41(1), 776-777

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB Conjugated polymers with well defined conjugation length were prepared via 1,3-phenylene and 9,10-bianthrylene bridges of different  $\pi$ -moieties, like 4,4'-stilbene, alkyl and phenylalkyl substituted derivs., and terthiophenes. The 4,4'-dibromostilbenes were prepared by Wittig and McMurray reactions and polymerization was accomplished by Pd induced Suzuki or Ni catalyzed Yamamoto coupling. The absorption and emission was easily adjusted in the conjugated bridged polymers. The poly(9,10-anthrylene-4,4'-stilbenylene)s have nearly identical fluorescence to that of poly-bianthrylene-stilbenylenes, but the latter showed solvatochromic shifts of fluorescence.

IT 231606-50-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(confined conjugation for adjustable optical properties)

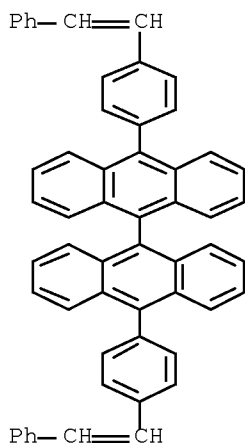
IT 231606-50-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(confined conjugation for adjustable optical properties)

RN 231606-50-1 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)  
 RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 32 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2000:120871 HCAPLUS Full-text

DN 132:173451

TI Aromatic hydrocarbon compound for organic electroluminescent device

IN Azuma, Hisahiro; Hosokawa, Chishio; Kusumoto, Tadashi

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000053677	A	20000222	JP 1998-225680	19980810 <--
PRAI	JP 1998-225680		19980810		

OS MARPAT 132:173451

AB The aromatic hydrocarbon compound for organic electroluminescent device has structure (R1)(Y1)C=CH-X-CH=C(R2)(Y2) ( X = C1-30 alkyl, alkoxy, C6-20 aryl, C6-18 aryl oxy, etc.; Y1-2 = C4-30 heterocyclic rings containing S, polyarylene; R1-2 = H, C1-30 alkyl, alkoxy, C6-20 aryl, C6-18 aryl oxy, amino, etc.). The aromatic hydrocarbon compound provides an organic electroluminescent device of the high electroluminescent efficiency, the decreased driving voltage, and the excellent heat-resistance.

IT 258833-10-2P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(aromatic hydrocarbon compound for organic electroluminescent device)

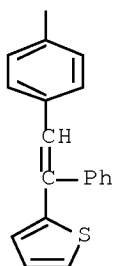
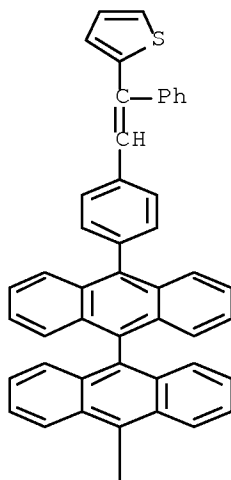
IT 258833-10-2P

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(aromatic hydrocarbon compound for organic electroluminescent device)

RN 258833-10-2 HCAPLUS

CN Thiophene, 2,2'-[[9,9'-bianthracene]-10,10'-diylbis[4,1-phenylene(1-phenyl-2,1-ethenediyl)]]bis- (9CI) (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L6 ANSWER 33 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2000:25608 HCAPLUS Full-text

DN 132:85990

TI Distyrylarylene derivative for organic electroluminescence device

IN Azuma, Hisahiro; Hosokawa, Chishio; Kusumoto, Tadashi

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000007604	A	20000111	JP 1998-171283	19980618 <--
PRAI	JP 1998-171283		19980618		
OS	MARPAT 132:85990				
AB	The distyrylarylene derivative has structure (R1)(R2)C=CH-Ar1-An-Ar2-CH=C(R3)(R4) ( An = divalent fused ≥3 rings; Ar1-2 = single bond, C6-30				

arylene, polyarylene; R1-4 = H, C6-30 allyl, polyallyl). The distyrylarylene derivative provides the improved luminescence efficiency and the decreased driving voltage.

IT 253870-12-1 253870-14-3

RL: TEM (Technical or engineered material use); USES (Uses)  
(Distyrylarylene derivative for organic electroluminescence device)

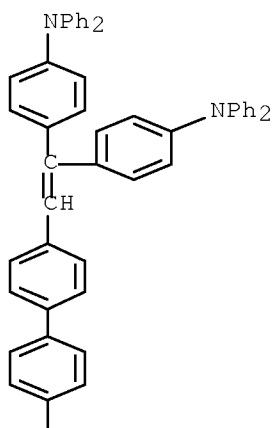
IT 253870-12-1 253870-14-3

RL: TEM (Technical or engineered material use); USES (Uses)  
(Distyrylarylene derivative for organic electroluminescence device)

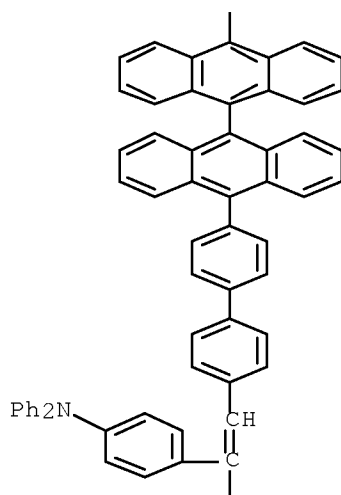
RN 253870-12-1 HCAPLUS

CN Benzenamine, 4,4',4'',4'''-[9,9'-bianthracene]-10,10'-diylbis([1,1'-biphenyl]-4',4'-diyl-2-ethenyl-1-ylidene)]tetrakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

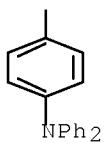
PAGE 1-A



PAGE 2-A

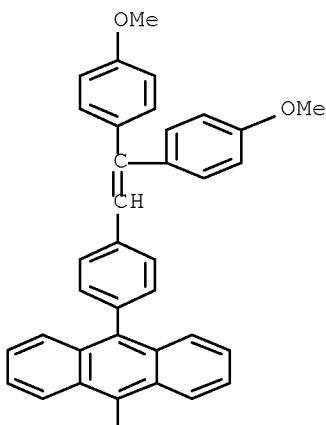


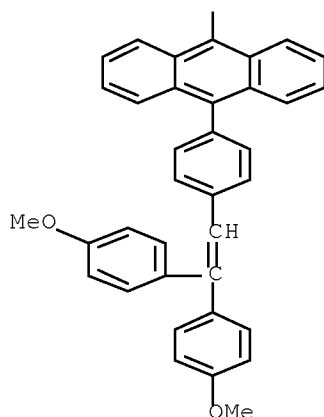
PAGE 3-A



RN 253870-14-3 HCAPLUS  
CN 9,9'-Bianthracene, 10,10'-bis[4-[2,2-bis(4-methoxyphenyl)ethenyl]phenyl]-  
(CA INDEX NAME)

PAGE 1-A





OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 34 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1999:502755 HCAPLUS Full-text  
 DN 131:151492  
 TI Organic electroluminescent elements for stable electroluminescent device  
 IN Shi, Jianmin; Tang, Ching W.; Chen, Chin H.  
 PA Eastman Kodak Company, USA  
 SO U.S., 34 pp.  
 CODEN: USXXAM

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5935721	A	19990810	US 1998-45388	19980320 <--
PRAI	US 1998-45388		19980320		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 131:151492

AB Organic electroluminescent devices comprising an anode, a cathode, and an organic electroluminescent element between the anode and the cathode are described in which the organic electroluminescent element includes an organic material or a mixture thereof of 9,10-di-(2-naphthyl)anthracene derivs.

IT 235099-52-2

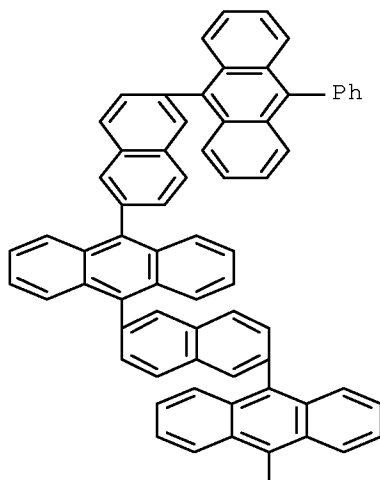
RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent elements employing naphthylanthracene derivs.)

IT 235099-52-2

RL: DEV (Device component use); USES (Uses)  
 (organic electroluminescent elements employing naphthylanthracene derivs.)

RN 235099-52-2 HCAPLUS

CN Anthracene, 9,10-bis[6-(10-phenyl-9-anthracenyl)-2-naphthalenyl]- (CA INDEX NAME)



Ph

OSC.G 42 THERE ARE 42 CAPLUS RECORDS THAT CITE THIS RECORD (42 CITINGS)  
 RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 35 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1999:242017 HCAPLUS Full-text  
 DN 131:102612  
 TI Synthesis and optical properties of novel blue fluorescent conjugated polymers  
 AU Baumgarten, Martin; Yuksel, Timucin  
 CS Max-Planck-Institut fur Polymerforschung, Mainz, D-55128, Germany  
 SO Physical Chemistry Chemical Physics (1999), 1(8), 1699-1706  
 CODEN: PPCPFQ; ISSN: 1463-9076  
 PB Royal Society of Chemistry  
 DT Journal  
 LA English  
 AB A synthetic approach was developed towards the synthesis of conjugated polymers with defined conjugation length, independent of the number of repeating units, resulting in a blue or green fluorescence. The approach is based on use of 1,3-phenylene (type 1) and 10,10'-bianthrylene (type 2) bridges of conjugated segments such as stilbenes and thiophenes which can easily be varied to further change the optical properties. Palladium-induced boronic acid Suzuki coupling is solvent dependent and the polymer yield was also dependent on chain length and solubility. Although the d.p. differed, and thus the conjugation length, the 1,3-phenylene bridging interrupts the conjugation and the optical absorption maxima of the polymers is identical, with  $\lambda_{\text{max}} = 348 \text{ nm}$ , as are the fluorescence and excitation emission spectra. Since the steric demands for anthryl substitution are much larger than for Ph



substitution, the diiodobianthryl compound was used to prepare the aryl analogs.

IT 231606-50-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(model compound; preparation and optical properties of blue fluorescent conjugated polymers containing phenylene or bianthrylene bridges controlling chain length)

IT 231606-53-4P, 4,4'-Bis(dihydroxyborylstilbene)-10,10'-Dibromo-9,9'-bianthryl copolymer, SRU

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and optical properties of blue fluorescent conjugated polymers containing phenylene or bianthrylene bridges controlling chain length)

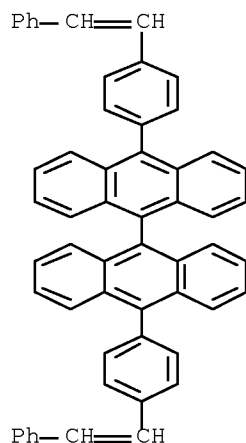
IT 231606-50-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(model compound; preparation and optical properties of blue fluorescent conjugated polymers containing phenylene or bianthrylene bridges controlling chain length)

RN 231606-50-1 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis[4-(2-phenylethenyl)phenyl]- (CA INDEX NAME)



IT 231606-53-4P, 4,4'-Bis(dihydroxyborylstilbene)-10,10'-Dibromo-9,9'-bianthryl copolymer, SRU

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

(preparation and optical properties of blue fluorescent conjugated polymers containing phenylene or bianthrylene bridges controlling chain length)

RN 231606-53-4 HCAPLUS

CN Poly[[9,9'-bianthracene]-10,10'-diyl-1,4-phenylene-(1E)-1,2-ethenediyl-1,4-phenylene] (9CI) (CA INDEX NAME)

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

OSC.G 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (22 CITINGS)

RE.CNT 18      THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6    ANSWER 36 OF 65    HCAPLUS    COPYRIGHT 2010 ACS on STN

AN    1995:997231    HCAPLUS    Full-text

DN    124:71121

OREF 124:13041a,13044a

TI    Phenylanthracene derivative and organic EL element

IN    Inoue, Tetsushi; Nakaya, Kenji

PA    TDK Corp., Japan

SO    Eur. Pat. Appl., 73 pp.

CODEN: EPXXDW

DT    Patent

LA    English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 681019	A2	19951108	EP 1995-302767	19950425 <--
	EP 681019	A3	19951115		
	EP 681019	B1	19990901		
	R: DE, FR, GB, NL				
	JP 08012600	A	19960116	JP 1995-125753	19950426 <--
	JP 3816969	B2	20060830		
	US 5635308	A	19970603	US 1995-427873	19950426 <--
	JP 2006193528	A	20060727	JP 2006-29058	20060206
	JP 4190542	B2	20081203		
PRAI	JP 1994-110569	A	19940426		
	JP 1995-125753	A3	19950426		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS    MARPAT 124:71121

AB    Phenylanthracene derivs. of the formula A1-L-A2 (A1 and A2 each are a monophenylanthryl or diphenylanthryl group and L is a valence bond or a divalent linkage group, typically arylene) are described. Their use as organic compound layers of organic electroluminescent (EL) devices, especially as light-emitting layers for blue light emission or as electron injecting and transporting layers, is indicated.

IT    172285-76-6P

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
(phenylanthracene derivs. and organic electroluminescent elements)

IT    23102-67-2P    172285-77-7P    172285-78-8P  
172285-79-9P    172285-80-2P    172285-81-3P  
172285-82-4P    172285-83-5P    172285-84-6P  
172285-85-7P    172285-87-9P    172285-88-0P

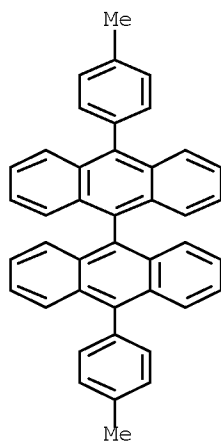
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(phenylanthracene derivs. and organic electroluminescent elements)

IT    172285-76-6P

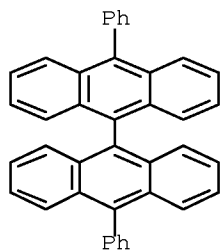
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
(phenylanthracene derivs. and organic electroluminescent elements)

RN    172285-76-6    HCAPLUS

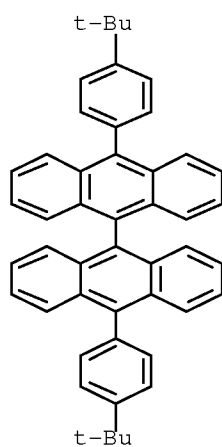
CN    9,9'-Bianthracene, 10,10'-bis(4-methylphenyl)-    (CA INDEX NAME)



IT 23102-67-2F 172285-77-7F 172285-78-8F  
 172285-79-9F 172285-80-2F 172285-81-3F  
 172285-82-4F 172285-83-5F 172285-84-6F  
 172285-85-7F 172285-87-9F 172285-88-0F  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (phenylanthracene derivs. and organic electroluminescent elements)  
 RN 23102-67-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)

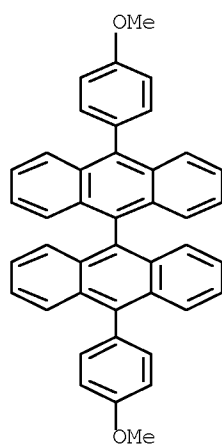


RN 172285-77-7 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX  
 NAME)



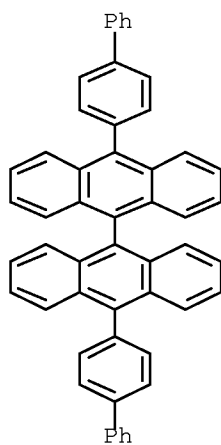
RN 172285-78-8 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis(4-methoxyphenyl)- (CA INDEX NAME)

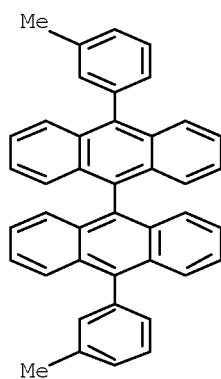


RN 172285-79-9 HCAPLUS

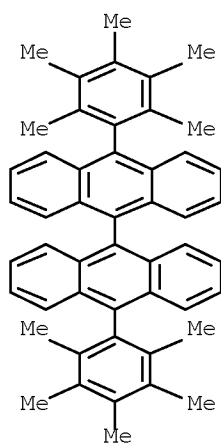
CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-4-yl)- (CA INDEX NAME)



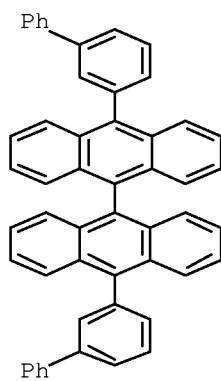
RN 172285-80-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis(3-methylphenyl)- (CA INDEX NAME)



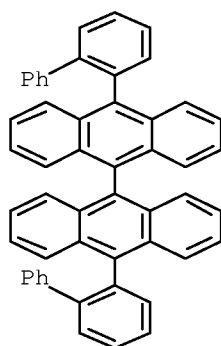
RN 172285-81-3 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis(2,3,4,5,6-pentamethylphenyl)- (CA INDEX NAME)



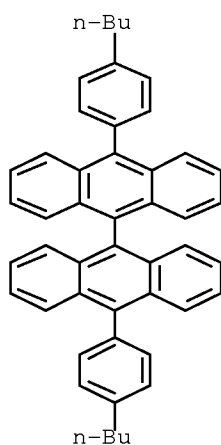
RN 172285-82-4 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-3-yl)- (CA INDEX NAME)



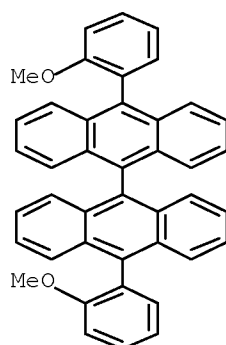
RN 172285-83-5 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis([1,1'-biphenyl]-2-yl)- (CA INDEX NAME)



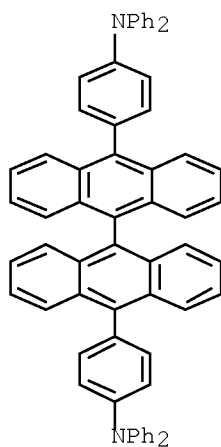
RN 172285-84-6 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis(4-butylphenyl)- (CA INDEX NAME)



RN 172285-85-7 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis(2-methoxyphenyl)- (CA INDEX NAME)

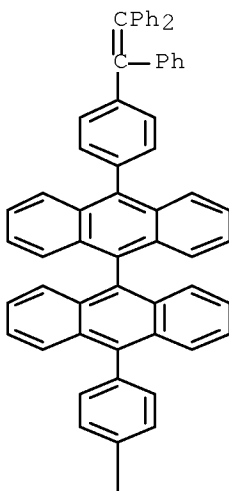


RN 172285-87-9 HCAPLUS  
 CN Benzenamine, 4,4'-[9,9'-bianthracene]-10,10'-diylbis[N,N-diphenyl]- (9CI)  
 (CA INDEX NAME)



RN 172285-88-0 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-bis[4-(1,2,2-triphenylethenyl)phenyl]- (CA  
 INDEX NAME)

PAGE 1-A



PAGE 2-A



OSC.G 39 THERE ARE 39 CAPLUS RECORDS THAT CITE THIS RECORD (64 CITINGS)

L6 ANSWER 37 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN



AN 1992:623016 HCAPLUS Full-text

DN 117:223016

OREF 117:38347a,38350a

TI Electrophotographic photoreceptor containing squarylium dye

IN Akao, Yuji; Tanabe, Mizue; Ozawa, Yoshiyuki; Yamada, Yoronobu

PA Citizen Watch Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 04031868	A	19920204	JP 1990-136991	19900529 <--
PRAI	JP 1990-136991		19900529		
OS	MARPAT 117:223016				

AB An electrophotog. photoreceptor contains a squarylium dye I [R<sub>1,2</sub> = H, halo, aliphatic hydrocarbon, alkoxy, amino, aryl, heterocyclyl, OH; R<sub>3</sub> = aliphatic hydrocarbon, aryl, heterocyclyl; Z<sub>1-3</sub> = cyclic hydrocarbon residue, heterocyclyl residue]. This electrophotog. photoreceptor shows a high sensitivity over visible to near-IR wavelength regions.

IT 144282-15-5P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation and use of, squarylium dye from, electrophotog. photoreceptor containing)

IT 144282-15-5P

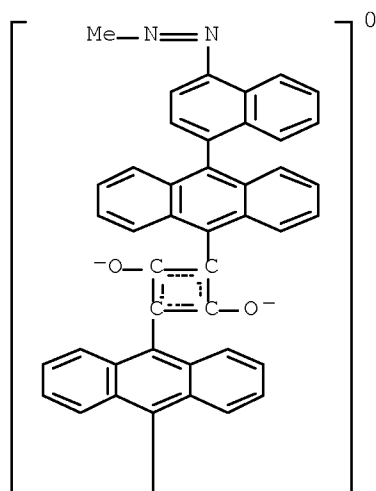
RL: SPN (Synthetic preparation); PREP (Preparation)

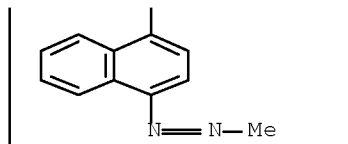
(preparation and use of, squarylium dye from, electrophotog. photoreceptor containing)

RN 144282-15-5 HCAPLUS

CN Cyclobutenediylum, 1,3-dihydroxy-2,4-bis[10-[4-(methylazo)-1-naphthalenyl]-9-anthracenyl]-, bis(inner salt) (9CI) (CA INDEX NAME)

PAGE 1-A





OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L6 ANSWER 38 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1992:436569 HCAPLUS Full-text

DN 117:36569

OREF 117:6357a,6360a

TI Electrophotographic photoreceptor containing squarylium pigment

IN Akao, Yuji; Tanabe, Mizue; Ozawa, Yoshiyuki; Yamada, Yoronobu

PA Citizen Watch Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04016853	A	19920121	JP 1990-119879	19900511 <--
PRAI	JP 1990-119879		19900511		

OS MARPAT 117:36569

AB The photoreceptor contains a squarylium pigment I [R = (substituted) aliphatic hydrocarbon group, aryl, heterocyclic; Z1-4 = (substituted) cyclic hydrocarbon residue, heterocyclic residue]. The photoreceptor showed high spectral sensitivity in a region from visible light to near IR light.

IT 142212-50-8

RL: USES (Uses)

(Preparation and use of, in electrophotog. photoreceptor with high spectral sensitivity)

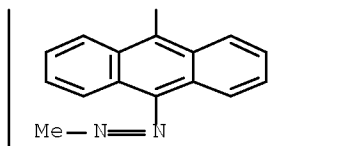
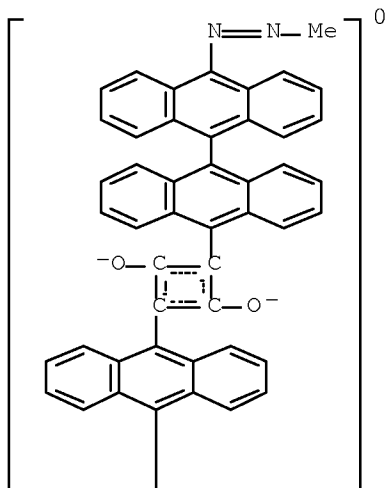
IT 142212-50-8

RL: USES (Uses)

(Preparation and use of, in electrophotog. photoreceptor with high spectral sensitivity)

RN 142212-50-8 HCAPLUS

CN Cyclobutenediylum, 1,3-dihydroxy-2,4-bis[10'-(methylazo)[9,9'-bianthracen]-10-yl]-, bis(inner salt) (9CI) (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L6 ANSWER 39 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1992:205026 HCAPLUS Full-text

DN 116:205026

OREF 116:34543a,34546a

TI Crystal structure of 10,10'-diphenyl-9,9'-bianthryl, (C<sub>6</sub>H<sub>5</sub>)(C<sub>14</sub>H<sub>8</sub>)<sub>2</sub>(C<sub>6</sub>H<sub>5</sub>)

AU Langer, V.; Sieler, J.; Becker, H. D.

CS Dep. Inorg. Chem., Chalmers Univ. Technol., Goeteborg, S-412 96, Swed.

SO Zeitschrift fuer Kristallographie (1992), 199(3-4), 296-9

CODEN: ZEKRDZ; ISSN: 0044-2968

DT Journal

LA English

AB The title compound is monoclinic, space group P2<sub>1</sub>/c, with a 9.263(3), b 24.85(1), c 12.560(4) Å, and β 102.17(2)°; Z = 4, R = 0.043. Atomic coordinates are given.

IT 23102-67-2, 10,10'-Diphenyl-9,9'-bianthryl

RL: PRP (Properties)

(crystal structure of)

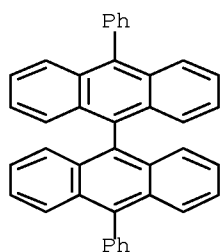
IT 23102-67-2, 10,10'-Diphenyl-9,9'-bianthryl

RL: PRP (Properties)

(crystal structure of)

RN 23102-67-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L6 ANSWER 40 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1992:127881 HCAPLUS Full-text

DN 116:127881

OREF 116:21631a,21634a

TI Molecular conformations of 9,9'-bianthryl, di-9-anthrylmethane, and some related twisted anthracene derivatives

AU Becker, Hans Dieter; Langer, Vratislav; Sieler, Joachim; Becker, Hans Christian

CS Dep. Org., Chalmers Univ. Technol., Goeteborg, S-412 96, Swed.

SO Journal of Organic Chemistry (1992), 57(6), 1883-7

CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

LA English

AB The mol. conformations of 9,9'-bianthryl (1), its 10,10'-diphenyl derivative (2), 9-p-tolylanthracene (3), and 9,10-diphenylanthracene (4) have been investigated by x-ray diffraction. The dihedral angles between the two aromatic ring systems in crystalline 1, in which the asym. unit consists of two discrete mols., were 74.65 (4) and 81.76 (5)°, resp. In 2, the two anthracene moieties are at an angle of 87.42 (4)°, and the Ph rings are twisted out of the plane of the adjacent anthracene by 73.2 (1) and 78.1 (1)°. The corresponding torsion angle between the two aromatic ring systems in 3 is 79.59 (8)°. In centrosym. 4 the Ph rings deviate from coplanarity with the anthracene ring system by 67.63 (5)°. Separating the two anthracene  $\pi$ -systems of 9,9'-bianthryl by a methylene group increases steric congestion, as was established by x-ray diffraction anal. of di-9-anthrylmethane (5). Its mol. geometry is characterized by a 2-fold axis of symmetry, and the two anthracene  $\pi$ -systems are in an orthogonal arrangement. Intramol. hydrogen-hydrogen distances in 5 are as short as 1.93 (3) Å, and  $\pi$ -orbital interaction was topol. facilitated by a contact distance of 2.601 (2) Å between the 9- and 9'-carbon atoms. By contrast, in 9-(9-anthrylmethylidene)-9,10-dihydroanthracene, which formally derives from 5 by a 1,5-hydrogen shift, the closest intramol. hydrogen-hydrogen contact is 2.28 (6) Å. Relief of steric strain derives from folding of the dihydroanthracene moiety by 39.0 (2)°.

IT 138836-10-9

RL: PRP (Properties)

(crystallization of, loss of toluene solvent by)

IT 23102-67-2P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation, conformation, and crystallog. of)

IT 138836-10-9

RL: PRP (Properties)

(crystallization of, loss of toluene solvent by)

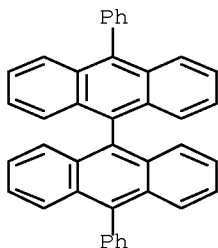
RN 138836-10-9 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-diphenyl-, compd. with methylbenzene (1:2) (CA INDEX NAME)

CM 1

CRN 23102-67-2

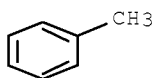
CMF C40 H26



CM 2

CRN 108-88-3

CMF C7 H8

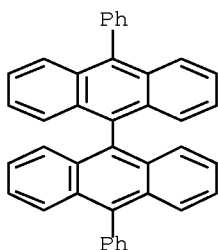


IT 23102-67-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation, conformation, and crystallog. of)

RN 23102-67-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



OSC.G 18 THERE ARE 18 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L6 ANSWER 41 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1983:52903 HCAPLUS Full-text

DN 98:52903

OREF 98:8121a,8124a

TI The multiplicity of reaction pathways of cation radicals derived from anthracene derivatives in solvents of low nucleophilicity

AU Hammerich, Ole; Parker, Vernon D.

CS H. C. Oersted Inst., Univ. Copenhagen, Copenhagen, DK-2100, Den.

SO Acta Chemica Scandinavica, Series B: Organic Chemistry and Biochemistry (1982), B36(8), 519-27

CODEN: ACBOCV; ISSN: 0302-4369

DT Journal

LA English

AB In MeCN containing CF<sub>3</sub>CO<sub>2</sub>H, the cation radicals of 9-substituted anthracenes either dimerize (a), react with MeCN (b), or react with CF<sub>3</sub>CO<sub>2</sub>H (c), depending on the nature of the 9-substituent. Pathway (a) is of importance when the intermediate dimeric dication, which has both the substituents and the charges in the 10,10'-positions, is stabilized by the electron-donating properties of the substituent. This pathway was observed exclusively for the 9-Ph and 9-methoxy derivs., and to a lesser extent with 9-chloroanthracene. Pathway (c) predominates when the 9-substituent destabilizes the pos. charge, as in 9-nitroanthracene. The intermediate case (b) is the predominant reaction pathway for the anthracene cation radical and is also observed in the 9-Me derivative. The feature of pathway (b) which differs most from (c) is that the intermediate cation radical-nucleophile adduct in (b) is charged, and if the substituent is electron withdrawing the oxidation of this species by cation radical is less favorable, so that trifluoroacetoxylation (c) can then compete effectively.

IT 23102-67-2F

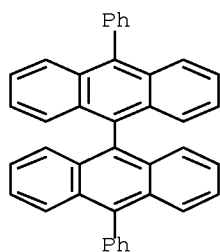
RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, from radical cation in acetonitrile containing trifluoroacetic acid, kinetics and mechanism of)

IT 23102-67-2P

RL: FORM (Formation, nonpreparative); PREP (Preparation)  
(formation of, from radical cation in acetonitrile containing trifluoroacetic acid, kinetics and mechanism of)

RN 23102-67-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 42 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1979:602278 HCAPLUS Full-text

DN 91:202278

OREF 91:32453a,32456a

TI Electrochemiluminescent display devices

IN Yamazaki, Shoei

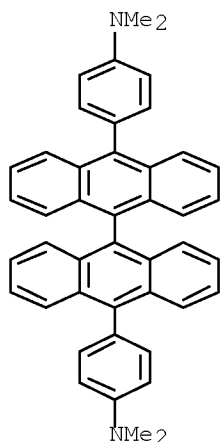
PA Daini Seikosha Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 2 pp.

CODEN: JKXXAF

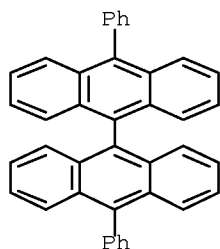
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 54071090	A	19790607	JP 1977-137574	19771116 <--
PRAI	JP 1977-137574	A	19771116		
AB	Electrochemiluminescent display devices contain organic electrochemiluminescent substances of the general formula I (R, R1 = alkyl, aryl). Thus, an electrolyte solution containing II 10-3 and [Bu4N]ClO4 0.1M was used to give an electrochemiluminescent display device which gave a bright yellowish green emission and had good durability.				
IT	71901-30-9				
	RL: USES (Uses) (electrochemiluminescent display devices containing)				
IT	71901-30-9				
	RL: USES (Uses) (electrochemiluminescent display devices containing)				
RN	71901-30-9	HCAPLUS			
CN	Benzenamine, 4,4'-[9,9'-bianthracene]-10,10'-diylbis[N,N-dimethyl- (9CI) (CA INDEX NAME)				



L6 ANSWER 43 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
AN 1970:121234 HCAPLUS Full-text  
DN 72:121234  
OREF 72:21783a,21786a  
TI Photochemical preparation of 4,11-diphenylbisanthene  
AU Maulding, Donald R.  
CS Central Res. Div., American Cyanamid Co., Stamford, CT, USA  
SO Journal of Organic Chemistry (1970), 35(4), 1221-3  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
AB The title compound (I) is prepared by the irradiation of a solution of 10,10'-diphenyl[Δ9,9'(10H,10'H)-bianthracene]-10,10'-diol (II) and iodine in C6H6. 3,10-Dihydroxy-3,10-diphenyl-3,10-dihydro-1,2,11,12- dibenzoperylene (III) is also converted to I. The quantum yield of the conversion of II to I is less than that for the II reaction.

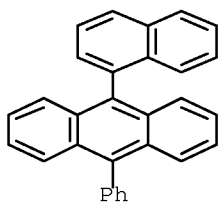
IT 23102-67-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 IT 23102-67-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 23102-67-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



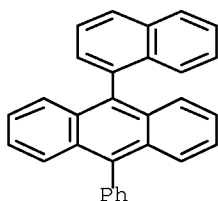
OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L6 ANSWER 44 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1964:437569 HCAPLUS Full-text  
 DN 61:37569  
 OREF 61:6544c-e  
 TI Temperature dependence of the structural absorption and fluorescence  
 spectra of the solutions of aromatic compounds  
 AU Klochkov, V. P.; Korotkov, S. M.  
 SO Optika i Spektroskopiya (1964), 16(5), 833-41  
 CODEN: OPSPAM; ISSN: 0030-4034  
 DT Journal  
 LA Unavailable  
 AB The temperature dependence between 90 and 290°K. of the absorption and  
 fluorescence spectra of the solns. of anthracene, 9,10-diphenylanthracene, and  
 1,4-diphenyl-1,3-butadiene was investigated. The correlation observed was  
 between the displacement of the maximum of the 0,0 zone of absorption and  
 fluorescence spectra and the character of intensity distribution in these  
 spectra. The results obtained were compared with the data on the temperature  
 dependence of the intensity distribution in spectral pairs. The causes were  
 discussed of the nonagreement of the maximum of the 0,0 zone of the absorption  
 and fluorescence spectra at increased temperature 24 references.  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence and spectrum of, in solns., temperature and)  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence and spectrum of, in solns., temperature and)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)





L6 ANSWER 45 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1963:474733 HCAPLUS Full-text  
 DN 59:74733  
 OREF 59:13785c-d  
 TI Use of  $\pi$ -complex of an olefin as a photochemical catalyst  
 AU Srinivasan, R.  
 CS Intern. Business Machines, Yorktown Heights, NY  
 SO Journal of the American Chemical Society (1963), 85(19), 3048-9  
 CODEN: JACSAT; ISSN: 0002-7863  
 DT Journal  
 LA Unavailable  
 AB In a photochem. reaction at 2537 A., a saturated solution of CuCl-1,5-cyclooctadiene  $\pi$ -complex (I) in Et<sub>2</sub>O with 1% 1,5-cyclooctadiene (II) in degassed Et<sub>2</sub>O solution yielded 30% tricyclo[3.3.0.0]octane (III). Previously in a vapor phase study (CA 58, 10898e), II yielded less than 1% III. Since the 2537 A. absorption of solns. I and II were identical, the greatly enhanced yield with addition of I to II resulted from catalytic action.  
 IT 63018-93-9  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 IT 63018-93-9  
 (Derived from data in the 7th Collective Formula Index (1962-1966))  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L6 ANSWER 46 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1963:474732 HCAPLUS Full-text  
 DN 59:74732  
 OREF 59:13784f-h,13785a-c  
 TI Relative rates of photochemical reactions of anthracene derivatives  
 AU Vembe, T. M.; Kiyanskay, L. A.; Cherkaso, A. S.  
 SO Zhurnal Obshchei Khimii (1963), 33(4), 2342-7  
 CODEN: ZOKHA4; ISSN: 0044-460X  
 DT Journal

LA Unavailable

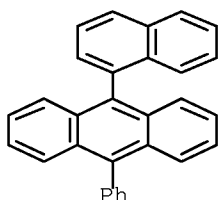
AB The kinetic data of photochem. reactions for the following anthracene derivs. were determined in 10<sup>-3</sup>M solns. in EtOH in air or in an O-free system [quantum yield of photochem. reactions under 366  $\mu$  light, quantum yield of fluorescence of O-free and of aerated systems, duration of excited state in O-free and in aerated systems ( X 10<sup>9</sup> sec.), and quenching consts. of fluorescence by O (in 1./mole) were given]: anthracene, 0.01, 0.22, 0.27, 4.3, 5.3, 170; 9-benzoyl, 0.00, 0.00, , 9-acetyl, 0.00, 0.00, -, -, -, -; 9-benzamido, 0.00, 0.00, -, -, -, -; 9-diacetylamino, 0.00, 0.35, 0.45, 5.4, 6.1, 210; 9-acetamido, 0.002, 0.44, -, 5.5, -, .-; 9-bromo, 0.002, 0.017, , , 1.1, 12; 9-acetoxy, 0.003, 0.15, 0.17, 2.9, 3.3, 100; 9-p-bromophenyl, 0.002, 0.27, 0.30, 3.8, 4.3, 82; 9-phenyl, 0.003, 0.04, 0.86, 5.1, 5.9, 260; 9-chloro, 0.006, 0.11, 0.12, 2.4, 2.7, 70; 9-p-tolyl, -, 0.44, 0.55, 5.5, 6.7, 186; 9-isobutyl, 0.01, 0.39, , 9-vinyl, 0.011, 0.60, -, -, -, -; 9- $\alpha$ -hydroxyethyl, 0.012, 0.13, -, -, -, -; 9-propyl, 0.017, 0.31, 0.38, 5.4, 6.4, 170; 9-ethyl, 0.019, 0.30, 0.38, 5.1, -, 200; 9-methoxy, 0.02, 0.17, 0.20, 3.5, 4.2, 130; 9-iso-propyl, 0.032, 0.31, -, 9-nitro, 0.034, 0.00, -, -, -, -; 9-methyl, 0.046, 0.29, 0.39, 5.1, 6.1, 260; 9-benzoyl, 0.188, -, -, -, -, -; 1-acetyl, 0.002, 0.41, -, 13.6, -, -; 1- $\alpha$ -hydroxyethyl, 0.007, 0.22, -, -, -, -, 1-methyl, -, 0.7, 0.33, 4.5, 5.0, 160; 2- $\alpha$ -hydroxyethyl, 0.005, 0.15, -, -, -, -, 2-acetyl, 0.006, 0.70, -, 16.5, -, -; 2-methyl, 0.01, 0.16, 0.18, 3.7, 4.2, 93; 2-vinyl, 0.014, 0.29, -, -, -, -, 1,4-dimethyl, -, 0.25, 0.30, 3.3, 4.0, 150; 1,3-dimethyl, 0.008, 0.21, 0.25, 3.5, 4.1, 140; 2,3-dimethyl, 0.011, 0.19, 0.20, 3.3, 3.7, 40; 9,10-dibromo, 0.00, 0.09, 0.099, 1.8, 1.9, 30; 9,10-dichloro, 0.00, 0.48, 0.56, 7.3, 8.2, 120; 9-bromo-10-phenyl, 0.00, 0.16, 0.16, 2.0, 2.1, 22; 9-chloro-10-methoxy, 0.00, 0.05, -, 1.0, -, -; 9-bromo-10-bromomethyl, 0.004, 0.10, -, 1.9, -, -; 9-bromo-10-propyl, 0.005, 0.12, 0.12, 2.5, 2.8, 22; 9-bromo-10ethyl, 0.01, 0.11, 0.11, 1.8, 1.85, -; 9-bromo-10-methyl, 0.013, 0.10, 0.13, 2.2, 2.9, 220; 9,10-dipropenyl, 0.02, 0.44, -, -, -, -; 9-propyl-10-propenyl, 0.027, 0.67, -, 8.5, -, -; 9,10diallyl, 0.036, 0.64, -, -, -, -; 9,10-dipropyl, 0.038, 0.60, 0.96, 10.1, 14.7, 450; 9,10-dibutyl, 0.038, 0.70, -, -, -, -; 9-methyl-10-ethyl, 0.068, 0.53, -, 10.1, -, -; 9,10-diethyl, 0.072, 0.63, -, -, -, -; 9,10-dimethyl, 0.130, 0.63, 0.98, 10.2, 16.2, 410; 9,10-diacetoxy-, 0.021, 0.44, 0.62, 9.3, 12.5, 310; 9-methyl-10-methoxymethyl, 0.038, 0.60, 0.93, 8.8, 13.0, 410; 9-methyl-10-methoxy, -, 0.21, 0.31, 5.3, 6.4, 220; 9,10dimethoxy, 0.04, 0.41, 0.60, 9.9, 12.6, 340; 9,10-bis(p-bromophenyl), 0.002, 0.55, 0.66, 5.7, 6.8, 150; 9,10-di(m-tolyl), 0.003, 0.64, 0.84, 6.4, 7.6, 230; 9,10-di(p-tolyl), 0.005, 0.73, 0.93, 6.4, 7.8, 200; 9,10-diphenyl, 0.004, 0.71, 0.99, 6.4, 7.6, 290; 9,10di(p-anisyl), 0.005, 0.55, -, -, -, -; 9-phenyl-10- $\alpha$ -naphthyl, -, 0.66, 0.77, 5.7, 6.7, 120. Generally, substitution in the end rings of anthracene has a smaller effect on photoreactivity than does substitution in the meso position.

IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
(photolysis of)

IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
(photolysis of)

RN 63018-93-9 HCAPLUS

CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L6 ANSWER 47 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1961:137356 HCAPLUS Full-text

DN 55:137356

OREF 55:25874i,25875a-i,25876a-d

TI Benzocyclobutenes. I. Attempted synthesis of 1,2-diphenylbenzocyclobutene

AU Baker, Wilson; McOmie, J. F. W.; Pope, G. A.; Preston, D. R.

CS Univ. Bristol, UK

SO Journal of the Chemical Society (1961) 2965-71

CODEN: JCSOA9; ISSN: 0368-1769

DT Journal

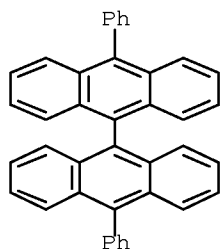
LA Unavailable

OS CASREACT 55:137356

AB The attempted preparation of the title compound (I) from o-Bz2C6H4 (II) was not successful. II was made in high yield from 9,10-dihydro-9,10-dihydroxy-9,10-diphenylanthracene (III). Wolff-Kishner reduction of II did not give o-(PhCH2)2C6H4 (IV), the product being 1,4-diphenylphthalazine (V). Clemmensen reduction of II was also not successful and II was recovered. Catalytic reduction gave 23% IV, but Na in isopentane-1-ol (VI) furnished 60% IV. LiAlH4 (VII) reduction of II yielded one of the stereoisomeric forms of [PhCH(OH)]2C6H4 (VIII), assigned the  $\alpha$ -form. VIII was also made from 3-phenylphthalide (IX) and PhMgBr (X), followed by Na-Hg reduction. The alc. VIII was easily cyclodehydrated to 9-phenylanthracene (XI), and the OH groups could not be replaced with Br. Pinacol reduction of II was unsuccessful, and Al-Hg in Cr6H6-EtOH or aqueous EtOH gave 1,3-diphenylisobenzofuran (XII), also obtained from Na-Hg, Na-Et2O, or Mg-MgI reduction of II. With Na-Hg in EtOH or Na-Hg in PrOH-AcOH the second isomer of VIII was obtained and assigned the  $\beta$ -form. Zn dust and alkali again gave the  $\beta$ -form of VIII with a little anthraquinone (XIII). Treatment of IV with 2 equivs. of N-bromosuccinimide (NBS) in CCl4 furnished [(PhCH(Br))2C6H4 (XIV). With 1 equivalent NBS the monobromo compound (XV) was obtained, and excess NBS gave 1,2,3,4,9-pentabromo-1,2,3,4-tetrahydro-10-phenylanthracene (XVI). XIV was easily changed to XVI. With Na in Et2O, XI and 10,10'-diphenyl-9,9'-bianthryl (XVII) were obtained; Zn-EtOH gave XI and 9,10-dihydro-9-phenylanthracene (XVIII); tert-BuOK yielded 9-bromo-10-phenylanthracene (XIX), NaI-EtOH or NaI-Me2CO at -80° to reflux temperature gave XI, XIX, and 9,9',10,10'-tetrahydro-10,10'-diphenyl-9,9'-bianthryl (XX). Likewise XV in KOH-EtOH or tert-BuOK-tert-BuOH gave XI and XVIII. A mixture of 10.9 g. III in 75 ml. AcOH was treated with 30 g. CrO3 in 150 ml. AcOH and 50 ml. H2O at 70° during 15 min., with constant stirring. The mixture was heated 2 hrs. on a steam bath, cooled, poured into H2O, and the precipitate collected. After treatment with dilute alkali, 6.8 g. II, m. 145-6° (EtOH) (mono-2,4-dinitrophenylhydrazones m. 199-200°), was obtained. Treatment of 2 g. II in 120 ml. EtOH with H at 23 atmospheric in the presence of 10% Pd-C at 70° for 12 hrs., followed by filtering the mixture, removing solvent, and extracting the residue with Et2O gave 0.43 g. IV, m. 77-8°. A solution of 2 g. II in 200 ml. VI was treated with 20 g. small pieces of Na at the boiling point, after the reaction subsided more VI was added, and when all of the Na had reacted the solvent was steam distilled. The oil residue was crystallized from EtOH to give 1.1 g. IV. Reduction of 2.8 g. II by Soxhlet extraction into 2.2 g. VII in 200 ml. refluxing Et2O gave 2.7 g. oil, which was chromatographed on Al2O3 to give 1.3 g. VIII, m. 127-8° ( $\alpha$ -form); diacetate m. 107-8°. VIII (8.5 g.) was also obtained from 11.5 g. 1-hydroxy-1,3-diphenylphthalan in 130 ml. MeOH and 100 g. 2% Na-Hg. Treatment of 5.4 g. 1,3-diphenylphthalan with 10 ml. 48% HBr, followed by neutralization with Na2CO3, and extraction with Et2O gave XI, m. 153-4°. A solution of 1.0 g. VIII in 75 ml. C6H6 containing a little C5H5N was treated with 1.6 ml. PBr3

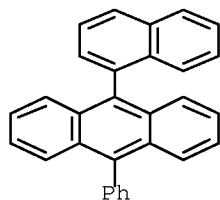
at 70° then kept at 55° 2 hrs. Addition of aqueous alkali and removal of C6H6 gave 0.46 g. XI. Al foil (12 g. Al, previously treated with 10% NaOH, washed, and dried) and 0.5 g. HgCl2 were added to 8.6 g. II in 200 ml. C6H6 and 300 ml. EtOH. The mixture was warmed until the reaction started and when it subsided, warmed 6 hrs. on a steam bath, and poured into dilute HCl. The C6H6 layer yielded 5.5 g. XII, m. 124-5°. Reduction of 5.7 g. II in 200 ml. Et2O with 50 g. 2% Na-Hg for 200 hrs. under N, the mixture added to 400 ml. 10% AcOH under N, and the Et2O layer separated, and evaporated furnished 3.0 g. XII. Similarly, 3.0 g. II in 50 ml. C6H6 added slowly to a solution of Mg-MgI2 in C6H6-Et2O [made according to Gomberg and Bachman, from 2 g. Mg (CA 21, 579)], and the mixture boiled 3 hrs., filtered, the C6H6 solution washed with dilute HCl, dried, and evaporated gave 1.8 g. XII. During 30 min., 300 g. 2% Na-Hg was added to 4.6 g. II in 100 ml. EtOH and after the exothermic reaction subsided the alc. solution was poured into H2O and extracted with Et2O. The oil obtained on removal of the solvent was treated with boiling aqueous EtOH and 1.8 g. VIII (β-isomer), m. 105-6°, was obtained. Reduction of 2.9 g. II with 75 ml. PrOH, 75 ml. AcOH, and 200 g. 2% Na-Hg gave 1.2 g. VIII, m. 127-8°. A mixture of 2.9 g. II in 50 ml. EtOH, 20 g. Zn dust, and 20 ml. 10% KOH was heated 8 hrs. on a water bath, filtered, and concentrated to 0.5 volume, H2O added, extracted with H2O and 0.3 g. XIII, and 1.6 g. VIII, m. 105-6°, were obtained. Addition of 60 g. Zn dust in portions during 15 min. to 11.5 g. II in 250 ml. boiling AcOH, followed by boiling 3 hrs., yielded 8.4 g. XX, m. 254-55°. A mixture of 1 g. II, 0.69 g. NBS, 10 mg. Bz2O2, and 15 ml. CCl4 was stirred 3 hrs. at 40° under illumination, 10 mg. more of Bz2O2 added after 1.5 hrs., and the cooled solution filtered and concentrated in vacuo to yield 1.33 g. XV. Repeating this reaction with 2 equivs. NBS (1.39 g.) gave 1.60 g. XIV. A mixture of 1 g. IV, 20 ml. CCl4, 3.44 g. NBS, and a trace of Bz2O2 was boiled 5 hrs., cooled, and filtered the filtrate shaken with NaHSO3 solution, evaporated, and the residue crystallized to yield 0.5 g. XVI, m. 160-1°. XIX (0.5 g.), 0.5 g. Br, and 10 ml. CCl4 was boiled 12 hrs. and the CCl4 removed to give XVI. A mixture of 9 g. XIV in 200 ml. Et2O was added during 12 hrs. to a stirred boiling mixture of 200 ml. Et2O and 4 g. powdered Na in a high-dilution apparatus. The mixture was stirred and boiled 8 hrs., filtered, and distilled to yield 1.4 g. XI and 2.4 g. XVII, m. 300°. XIV (4.2 g.) in 50 ml. EtOH added slowly to 100 ml. boiling 95% EtOH and 1.3 g. Zn dust, the mixture boiled 4 hrs., filtered, and the filtrate concentrated, treated with H2O, and extracted with Et2O gave 2.5 g. material, m. 119-20°, probably the 1:1 adduct of XI and XVIII. With tert-BuOK (from 0.46 g. K and 20 ml. tert-BuOH) in tert-BuOH, 4.2 g. XIV gave 1.4 g. XIX, m. 154-5°. A mixture of 2 g. XIV, 1.6 g. NaI, and EtOH was stirred at 40° for 12 hrs., the mixture cooled, filtered, and Na2S2O3 solution added. The mixture was extracted with Et2O and a yellow oil separated which was identified as XX (0.45 g.), 0.16 g. XIX, and 0.20 g. XI. XV (1.06 g.) in 12 ml. tert-BuOH (0.27 g. K) was stirred at room temperature 6 hrs., the mixture filtered, and the solid identified as XX (14 mg.). The filtrate yielded 800 mg. of a 1:1 adduct of XI and XVIII. A mixture of 1.27 g. XV in 20 ml. tert-BuOH (0.63 g. K) was stirred at 35° for 24 hrs., 100 ml. H2O added, and the mixture extracted with Et2O. The exts. yielded 0.55 g. of the 1:1 adduct described above, 85 mg. XVIII, and 160 mg. XI.

IT 23102-67-2P, 9,9'-Bianthryl, 10,10'-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 23102-67-2P, 9,9'-Bianthryl, 10,10'-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 23102-67-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 48 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:75588 HCAPLUS Full-text  
 DN 51:75588  
 OREF 51:13580b-c  
 TI Duration of fluorecence for the meso derivatives of anthracene  
 AU Cherkasov, A. S.; Molchanov, V. A.; Vember, T. M.; Voldaikina, K. G.  
 SO Soviet Phys. "Doklady" (1956), 1, 427-9  
 DT Journal  
 LA English  
 AB See C.A. 51, 9329i.  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence of, duration of)  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence of, duration of)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)

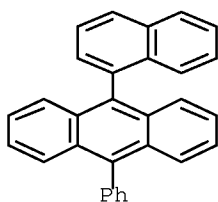


OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L6 ANSWER 49 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:75587 HCAPLUS Full-text  
 DN 51:75587  
 OREF 51:13579i,13580a-b  
 TI Fluorescence efficiencies of organic compounds  
 AU Furst, Milton; Kallmann, Hartmut; Brown, Felix H.  
 CS New York Univ., New York, NY  
 SO Journal of Chemical Physics (1957), 26, 1321-32  
 CODEN: JCPSA6; ISSN: 0021-9606  
 DT Journal  
 LA Unavailable  
 AB The relative fluorescence efficiencies of 334 organic compds. were measured in solution under high-energy and ultraviolet excitations. Good correlation between the relative fluorescence efficiencies under both types of radiation

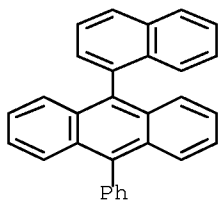
was observed for the compds. in solution. The high-energy fluorescence was affected by O and the solvent mol. was influenced to a greater extent than the solute. Solid and solution fluorescence were not well correlated. The NO<sub>2</sub> group produced a decrease in the emitted light in all compds. Cl and Br, which generally decreased the fluorescence, increased the fluorescence in compds. such as the 9,10-anthracene derivs. Some substitutions can be visualized as screening the mol. from interactions which induce nonradiative transitions. The influence of substitutions on the fluorescence of a solute did not depend on the solvent so long as the solvent was capable of transferring energy effectively.

IT 63018-93-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 IT 63018-93-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)

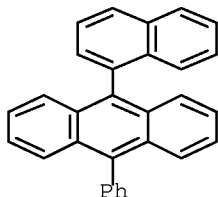


OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L6 ANSWER 50 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:75586 HCAPLUS Full-text  
 DN 51:75586  
 OREF 51:13579g-i  
 TI Color and luminescence of feldspars-with an addendum: anhydrite  
 fluorescence reversible by tempering  
 AU Przibram, Karl  
 SO Osterr. Akad. Wiss., Math.-naturw. Kl., Sitzber. Abt. II (1956),  
 165, 281-311  
 DT Journal  
 LA Unavailable  
 AB The green color of amazonite is shown to be due to natural irradiation. Most feldspars exhibit a green fluorescence partly caused by Mn but mostly caused by adsorbed H<sub>2</sub>O. The blue fluorescence of some feldspars is due to Eu. The green fluorescence of all the feldspars studied and also of anhydrite, wollastonite, and gypsum is weakened by prior heating; however, it is strengthened by another strong heating for a short time or weak heating for a longer time. Sometimes this step produces a fluorescence intensity superior to the natural one. This phenomenon is called "fluorescence reversible by tempering." In the case of anhydrite, the 1st heating shifts the fluorescence towards the orange-yellow, the 2nd shifts it back toward the green. It is shown that adsorbed moisture is the underlying cause of this phenomenon.  
 IT 63018-93-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 IT 63018-93-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



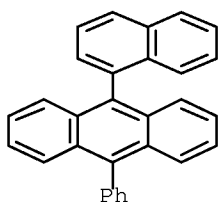
L6 ANSWER 51 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:60504 HCAPLUS Full-text  
 DN 51:60504  
 OREF 51:11080g  
 TI Absorption spectra, fluorescence spectra, and fluorescence quantum yields  
 of some meso derivatives of anthracene  
 AU Cherkasov, A. S.  
 SO Bull. Acad. Sci. U.S.S.R., Phys. Ser. (1956), 20, 436-9  
 DT Journal  
 LA English  
 AB See C.A. 51, 870g.  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence and spectrum of)  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence and spectrum of)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



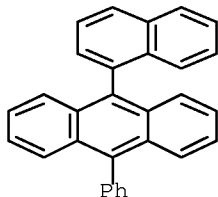
L6 ANSWER 52 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:50617 HCAPLUS Full-text  
 DN 51:50617  
 OREF 51:9330a-c  
 TI Phosphorescence spectra of some aromatic acids at liquid-air temperature  
 AU Pyatnitskii, B. A.  
 SO Doklady Akademii Nauk SSSR (1956), 109, 503-6  
 CODEN: DANKAS; ISSN: 0002-3264  
 DT Journal  
 LA Unavailable  
 AB The phosphorescence spectra of benzoic, phthalic, and gallic acids were  
 studied in alc. solns. at low temps. The BzOH spectrum was found to extend  
 from 4047 to 5431 A., and is composed of 8 bands. The phthalic acid extends  
 from 4034 to 5837 A. and contains 5 bands, and the gallic acid spectrum from

4276 to 6293 Å. with 10 bands. The phosphorescence spectra of aromatic acids have a vibrational structure. All 3 spectra show the same vibration frequency of 313 and 608-1 cm., corresponding to the C-H bond and the benzene ring C-H bond. All band maximum in the phosphorescence spectra are expressed by  $\nu = \nu_0 - n_1\nu' - n_2\nu'' - n_3\nu''' - n_4\nu''''$  where  $\nu_0$  is the frequency maximum with the highest frequency, and  $n_1, n_2, n_3$ , and  $n_4$  are constant for each maximum

IT 63018-93-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 IT 63018-93-9  
 (Derived from data in the 6th Collective Formula Index (1957-1961))  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)

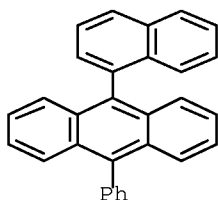


L6 ANSWER 53 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:50616 HCAPLUS Full-text  
 DN 51:50616  
 OREF 51:9329i,9330a  
 TI Duration of fluorescence for the meso derivatives of anthracene  
 AU Cherkasov, A. S.; Molchanov, V. A.; Vember, T. M.; Voldaikina, K. G.  
 SO Doklady Akademii Nauk SSSR (1956), 109, 292-4  
 CODEN: DANKAS; ISSN: 0002-3264  
 DT Journal  
 LA Unavailable  
 AB The duration of fluorescence was measured directly on alc. solns. of 47 meso derivatives of anthracene to determine the effect of different substituting groups.  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence of, duration of)  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence of, duration of)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)





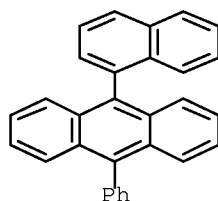
L6 ANSWER 54 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1957:4387 HCAPLUS Full-text  
 DN 51:4387  
 OREF 51:870g-i  
 TI Absorption spectra, fluorescence spectra, and fluorescence quantum yields  
 of some meso derivatives of anthracene  
 AU Cherkasov, A. S.  
 SO Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya (1956), 20,  
 478-81  
 CODEN: IANFAY; ISSN: 0367-6765  
 DT Journal  
 LA Unavailable  
 AB Measurements on solns. of anthracene and 20 of its derivs. in EtOH, show the  
 following trends: (1) The spectra consist of 2 bands corresponding to  
 different electronic transitions. Naphthyl derivates show addnl. absorption  
 bands. (2) The NH2 group strongly modifies the shape of the long wave  
 absorption band. (3) Luminescence spectra are different in alkyl and aryl  
 derivs. (4) The distance between the absorption and the fluorescence maximum  
 is smaller in spectra with pronounced vibration character. (5) Alkyl, aryl,  
 and the amino group increase the quantum yield of fluorescence; the quantum  
 output increases with the mol. weight of the group and it is twice as large in  
 di-derivs. as in mono-derivs. (6) Introduction of the acetyl group increases,  
 that of the benzyl group quenches, fluorescence.  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence and spectrum of)  
 IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 (fluorescence and spectrum of)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



L6 ANSWER 55 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1956:72759 HCAPLUS Full-text  
 DN 50:72759  
 OREF 50:13614h-i,13615a-b  
 TI Absorption and luminescence investigation of some meso-aryl and meso-alkyl  
 anthracene derivatives  
 AU Cherkasov, A. S.  
 SO Zhurnal Fizicheskoi Khimii (1955), 29, 2209-17  
 CODEN: ZFKHA9; ISSN: 0044-4537  
 DT Journal  
 LA Unavailable  
 AB Absorption spectra, fluorescence spectra, and fluorescence yields of  
 anthracene, 9-methylanthracene, 9-ethylanthracene, 9-propylanthracene, 9-  
 butylanthracene, 9-isobutylanthracene, 9-phenylanthracene, 9,10-  
 dimethylanthracene, 9,10-dipropylanthracene, 9,10-diphenylanthracene, 9-

phenyl-10-(1-naphthyl)anthracene and 9,10-di-1-naphthylanthracene have been studied. The absorption and fluorescence spectra of these anthracene derivs. are displaced towards the longer wave lengths against the anthracene spectra. The displacement of the disubstituted derivs. is nearly double that of the compds. The fluorescence spectra of the propylanthracenes are considerably more diffuse than the absorption spectra, and the mirror similarity is destroyed. The fluorescence quantum yields of the alc. solns. of the 9-monoalkyl and 9-monoaryl anthracenes are 1.5-2 times higher than of the anthracene solns., while the fluorescence quantum yields of the disubstituted anthracene derivs. are approx. double the yields of the corresponding monosubstituted compds., and approach the value of 1. In the alkyl substituted anthracenes, the quantum yield increases with an increase in the mol. weight of the substituents.

IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
(luminescence and spectrum of)  
IT 63018-93-9, Anthracene, 9-(1-naphthyl)-10-phenyl-  
(luminescence and spectrum of)  
RN 63018-93-9 HCAPLUS  
CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



OSC.G 15 THERE ARE 15 CAPLUS RECORDS THAT CITE THIS RECORD (15 CITINGS)

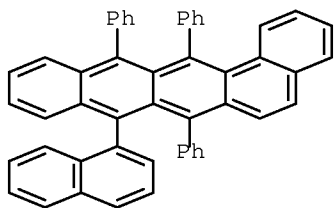
L6 ANSWER 56 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
AN 1954:35944 HCAPLUS Full-text  
DN 48:35944  
OREF 48:6414e-i,6415a-i,6416a-i  
TI Angular benzonaphthacenes  
AU Bertin, Daniel  
CS College of France, Paris  
SO Ann. chim. (Paris) (1953), 8, 296-346  
DT Journal  
LA Unavailable  
AB cf. C.A. 46, 11170e. The benzonaphthacenes resulting from the dimerization of Ph(PhC.tplbond.C)( $\alpha$ -C10H7)CCl (I) have been characterized, as have certain other benzonaphthacenes. I (1.5 g.) and 20 g. NaHCO<sub>3</sub> mixed in a mortar, transferred to a beaker, heated in an oven 4 h. at 70°, 6 h. at 80°, and 2 h. at 100° (with the mixture stirred frequently, especially at the start of the reaction, then packed to the bottom of the vessel), the cooled products dissolved in H<sub>2</sub>O and Et<sub>2</sub>O, and the organic layer washed with dilute HCl, then with H<sub>2</sub>O, and evaporated yields a dark powder which is dissolved in Me<sub>2</sub>CO; after several hrs., a red precipitate forms, and concentration of the liquid gives a resin which is chromatographed on Al<sub>2</sub>O<sub>3</sub> with cyclohexane and finally 1:1 C<sub>6</sub>H<sub>6</sub>-cyclohexane, each 100-mL. portion of eluate evaporated to dryness, and the residue taken up in Et<sub>2</sub>O. The 1st fractions deposit yellow-orange needles; those not doing so are rechromatographed. The 1st mother liquors slowly deposit massive yellow crystals, and addnl. washings and recrystns. completely sep. the yellow and yellow-orange products. The material eluted by

the solvent pair is 1-benzoyl-2-( $\alpha$ -naphthyl)-2-phenylethylene, m. 107-8° (40% yield). The red compound, recrystd., successively from 2:1 heptane-CS<sub>2</sub>, 2:1 HOAc-CS<sub>2</sub>, and Bu<sub>2</sub>O, gives 10% red needles, m. 301-2°, of 5,11-diphenyl-6,12-di( $\alpha$ -naphthyl)naphthacene (II), C<sub>50</sub>H<sub>32</sub>. The yellow-orange material, recrystd. from HOAc, then Bu<sub>2</sub>O, gives 3% yellow-orange needles of 8-( $\alpha$ -naphthyl)-7,13,14-triphenylbenzo[a]naphthacene (III), C<sub>50</sub>H<sub>32</sub>, m. 257-8°. Similar treatment of the yellow product gives 2% massive crystals of 7,8,15,16-tetraphenyldibenzo[a,j]naphthacene (IV), C<sub>50</sub>H<sub>32</sub>, m. 323-4°. II, III, and IV were assigned structures after comparing their absorption spectra with those of compds. described below and by analogy with work on anthracene and naphthacene. II (0.2 g.) in 500 mL. CS<sub>2</sub> exposed to sunlight until the fluorescence disappears (3-4 min.), the solvent evaporated in vacuo, and Et<sub>2</sub>O added gives 0.18 g. 5,11-diphenyl-6,12-di( $\alpha$ -naphthyl)naphthacene 5,12-peroxide (V), C<sub>50</sub>H<sub>32</sub>O<sub>2</sub>, m. 266-8° (decomposition), which decompose at 180°, liberating 85% of its O and regenerating II. III (0.2 g.) in 1 l. CS<sub>2</sub> similarly treated (15 min.) gives square white crystals (VI) when Et<sub>2</sub>O is added and the Et<sub>2</sub>O mother liquor deposits needles (VII); cyclohexane and Et<sub>2</sub>O are used alternately to complete the separation. From spectral data, VI is designated as the 8,13-peroxide of III, m. 268-70° (decomposition), while VII is the 7,14-peroxide, m. 246-8° (decomposition); the yields of VI and VII are 50 and 25%, resp. VI decompose at 200°, liberating 84% of its O. VII decompose at 185° to liberate 81% of its O; both regenerate III. IV (0.07 g.) in 700 mL. CS<sub>2</sub> (plus 1 g. of Na<sub>2</sub>CO<sub>3</sub>) exposed 2 h. with agitation gives 75% IV 7,16-peroxide (VIII), m. 244-6° (decomposition). Heated to 140°, VIII becomes violet with no loss of O, then at 170° it releases 60% of its O to regenerate IV. Wetting the violet intermediate with any solvent gives the colorless VIII, which again becomes violet at 140°. VIII warmed slowly in a "heavy" solvent regenerates IV without passing through the intermediate stage. Since free radicals are generally colored, and since the O is liberated in the mol. form, B. suggests that 1 end of the peroxide bridge is broken to form a free diradical which on further heating ruptures at the remaining C-O linkage to give IV. CH<sub>2</sub>(CO<sub>2</sub>H)<sub>2</sub> (5.5 g.), 5 mL. of a 30% MeNH<sub>2</sub> solution, 5 g. freshly distilled  $\alpha$ -C<sub>10</sub>H<sub>7</sub>CHO, and 25 mL. C<sub>5</sub>H<sub>5</sub>N heated 1 h. at 100°, refluxed 1 h., cooled, 0.5 g. CH<sub>2</sub>(CO<sub>2</sub>H)<sub>2</sub> and 1.5 mL. concentrated NH<sub>4</sub>OH added, the mixture refluxed 4 h., and N HCl added ppts. 70% 3-( $\alpha$ -naphthyl)acrylic acid (IX), C<sub>13</sub>H<sub>10</sub>O<sub>2</sub>, m. 209-10° (from HOAc or alc.). IX (5 g.) slowly added to 5 g. Br in CHCl<sub>3</sub> deposits after 1 h. 2,3-dibromo-3-( $\alpha$ -naphthyl)propionic acid (X), and concentration of the mother liquor in vacuo without heating gives a 2nd crop; final yield, 90%, m. 188-9° (from CCl<sub>4</sub>). X (10 g.) dissolved in 250 mL. of 10% K<sub>2</sub>CO<sub>3</sub> deposits an oil; extraction with Et<sub>2</sub>O and distillation yields 90% 1-bromo-2-( $\alpha$ -naphthyl)ethylene (XI), C<sub>11</sub>H<sub>9</sub>Br, b<sub>14</sub> 171-3°, b<sub>4.5</sub> 141.5-2.0°, d<sub>0</sub> 1.4424 (supercooled), d<sub>20</sub> 1.4230, m. 12-14°, n<sub>20D</sub> 1.6780. XI (4 g.) is added slowly to stirred PhLi (from 7 g. PhBr) in Et<sub>2</sub>O and the mixture decomposed with ice; distillation gives 90%  $\alpha$ -naphthylacetylene, b<sub>4</sub> 92°, d<sub>0</sub> 1.0660, d<sub>20</sub> 1.0513, n<sub>20D</sub> 1.6360, m. 1-2° (Hg acetylide, double m.p. 180-1° and 186-7°; Cu acetylide, formation described, no consts.). PhLi in Et<sub>2</sub>O added to 2.4 g. XI, the product treated with 2 g. of Ph<sub>2</sub>CO, warmed slightly, decomposed with ice after 1 h., and the Et<sub>2</sub>O evaporated gives an oil, diphenyl( $\alpha$ -naphthylethynyl)carbinol (XII), which is converted by PCl<sub>5</sub> to the chloride (XIII), C<sub>25</sub>H<sub>17</sub>Cl, 65%, m. 103-4° (from Et<sub>2</sub>O-petr. ether). Refluxing XIII 15 min. in alc. gives, on cooling, 90% pale yellow crystals of 1-( $\alpha$ -naphthoyl)-2,2-diphenylethylene, C<sub>25</sub>H<sub>18</sub>O, m. 109-10°, also obtained by refluxing XII in alc. 10% H<sub>2</sub>SO<sub>4</sub>. XIII (0.15 g.) plus 1 drop of quinoline in an evacuated tube placed in a bath at 140°, warmed slowly to 215°, and the cooled product treated with Me<sub>2</sub>CO gives a precipitate of red and white compds. Most of the white compound, m. 272° (C 91.58, H 4.81%; uncharacterized), is separated by sublimation in vacuo at 260°. The red material, crystallized alternately from CCl<sub>4</sub> and Me<sub>2</sub>CO, then from Bu<sub>2</sub>O and from HOAc, gives 25% II. To 2.5 equivs. of

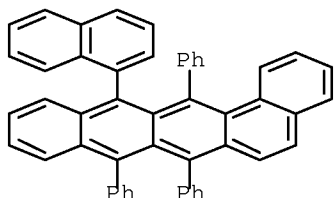
$\alpha$ -naphthylzinc chloride in refluxing benzene is added a hot suspension of 5 g. 1,4-diphenyl-2,3-naphthalenedicarboxylic acid anhydride (XIV), the mixture refluxed and stirred 4 h., cooled, the C<sub>6</sub>H<sub>6</sub> decanted, C<sub>6</sub>H<sub>6</sub> and 50% HCl added, the resulting solid dissolved in Et<sub>2</sub>O, and the solution washed and concentrated to precipitate 70% 1,4-diphenyl-3-( $\alpha$ -naphthoyl)-2-naphthalenecarboxylic acid (XV), C<sub>34</sub>H<sub>22</sub>O<sub>3</sub>, m. 245-6° (Et ester, m. 157-8°). XV (2 g.) dissolved in 100 mL. concentrated H<sub>2</sub>SO<sub>4</sub> and decomposed with ice after 2 h. gives 1.3 g. orange 2-phenyl-1-( $\alpha$ -naphthoyl)benzo[3,4]fluoren-9-one (XVI), C<sub>34</sub>H<sub>20</sub>O<sub>2</sub>, m. 223-4° (from HOAc), and not the desired benzonaphthacenediquinone. Treating XVI with 3-4 equivs. of PhLi and decomposing with aqueous HCl gives 1-[phenyl( $\alpha$ -naphthyl)hydroxymethyl]-2,9-diphenylbenzo[3,4]fluoren-9-ol, C<sub>46</sub>H<sub>32</sub>O<sub>2</sub>, m. 271-2° (from PhMe).  $\beta$ -Naphthylzinc chloride treated with XIV gives 85% 1,4-diphenyl-3-( $\beta$ -naphthoyl)-2-naphthalenecarboxylic acid (XVII), m. 230-1° (from C<sub>6</sub>H<sub>6</sub>) [Et ester, m. 151-2°; acid chloride, m. 185-6° (decomposition)]. Treating XVII with concentrated H<sub>2</sub>SO<sub>4</sub> and decomposing the product with H<sub>2</sub>O gives the 1-( $\beta$ -naphthoyl) isomer of XVI, red-orange crystals from HOAc, m. 263-4°, which with PhLi gives 60% 1-[phenyl( $\beta$ -naphthyl)hydroxymethyl]-2,9-diphenylbenzo[3,4]fluoren-9-ol, C<sub>46</sub>H<sub>32</sub>O<sub>2</sub>, m. 305-6° (from cyclohexane-C<sub>6</sub>H<sub>6</sub>). On standing, the mother liquor from the fluoreneol ppts. orange crystals of an unknown substance, m. 292-3° (C 87.64, H 4.60%). Condensation of C<sub>10</sub>H<sub>8</sub> and succinic anhydride gives  $\alpha$ - and  $\beta$ -C<sub>10</sub>H<sub>7</sub>CO(CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>H (XVIII), both of which should theor. go to 1,4-phenanthrenequinone (XIX). But the  $\beta$ -isomer gives 4-oxo-1,2,3,4-tetrahydrophenanthrene, yielding only a small amount of the 4-phenanthrol, from which the difficultly separable XIX and its 3,4-isomer are obtained. To avoid the last separation, the XVIII are separated. Et<sub>2</sub>O decolorizes a mixture of 1 g. XIX, 1.3 g. 1,3-diphenylisobenzofuran, and a little CHCl<sub>3</sub>, and ppts. 2.6 g. 8,13-diphenyl-8,13-epoxy-7a,8,13,13a-tetrahydrobenzo[a]naphthacene-7,4-dione (XX), C<sub>34</sub>H<sub>22</sub>O<sub>3</sub>, m. 162-4° (decomposition). Allowing XX (2.16 g.) to stand 12 h. in 200 mL. HOAc saturated with gaseous HBr (approx. 4M) and adding C<sub>6</sub>H<sub>6</sub>, then H<sub>2</sub>O, and washing and evaporating the organic layer gives 1.85 g. 8,13-diphenylbenzo[a]naphthacene-7,14-dione (XXI), C<sub>34</sub>H<sub>20</sub>O<sub>2</sub>, m. 192-3° (from HOAc); from C<sub>6</sub>H<sub>6</sub> it seps. in crystals, m. 177-80°, with 1 mol. of solvent which is removed by heating 2 h. at 125°/20 mm. XXI (0.5 g.) in C<sub>6</sub>H<sub>6</sub> treated slowly with 5 equivs. of PhLi (ice bath), the product hydrolyzed after 30 min. and petr. ether added ppts. 0.55 g. 7,8,13,14-tetraphenyl-7,14-dihydroxy-7,14-dihydrobenzo[a]naphthacene (XXII), separating from C<sub>6</sub>H<sub>6</sub>, then Et<sub>2</sub>O, as a solvated product, m. 230-3°, which, dried by heating 6 h. at 120-30°/4 mm., m. 299-1°. To a stirred solution of 0.3 g. XXII in HOAc is added slowly 3 mL. of a molar solution of TiCl<sub>3</sub> in 1:1 concentrated HCl-HOAc, H<sub>2</sub>O and benzene are added after 5 min., and the organic layer is washed, dried, and evaporated to give 0.13 g. yellow-orange 7,8,13,14-tetraphenylbenzo[a]naphthacene (XXIII), C<sub>46</sub>H<sub>30</sub>, m. 301-2°. XXIII (0.5 g.) in 1 l. CS<sub>2</sub> with a small amount of NaHCO<sub>3</sub> exposed to sunlight until the fluorescence disappears, the solvent evaporated, and the residue washed with Et<sub>2</sub>O gives 0.25 g. hexagonal crystals of 7,8,13,14-tetraphenylbenzo[a]naphthacene 8,13-peroxide (XXIV), m. 223-5° (decomposition). The mother liquor extracted with petr. ether gives 0.05 g. needles of the 7,14-peroxide (XXV), m. 195-200° (decomposition). XXIV decompose 185°, liberating 72% of its O and regenerating XXIII; XXV decompose 170°, releasing 20% of its O and regenerating XXIII. XXI with PhMgBr yields, after hydrolysis, 80% 7,8,13-triphenyl-7-hydroxy-14-oxo-7,14-dihydrobenzo[a]naphthacene (XXVI), C<sub>40</sub>H<sub>26</sub>O<sub>2</sub>, m. 264-5° (considered to be the 7,8,13-instead of 8,13,15-isomer because of steric effects), which with PhLi gives XXII. XXVI in Me<sub>2</sub>CO with Zn dust and several drops of HCl changes from yellow-orange to pale yellow; addition of HCl restores the orange shade, which fades to yellow, this is repeated until the orange fails to reappear, H<sub>2</sub>O and benzene are added, and the organic layer after washed, yielding 80% 7,8,13-

triphenylbenzo[a]naphthacene (XXVII), m. 279-80° (from HOAc). XXVII exposed to sunlight gives only photo-oxide, the 7,14-peroxide, m. 248-50° (decomposition), of the 2 theor. possible. The structure is assigned after examination of the absorption spectrum. The peroxide decompose 175°, liberating 51% of its O and regenerating XXVII. Phenyl( $\alpha$ -naphthyl)isobenzofuran (Guyot and Vallette, C.A. 5, 3401), m. 87-8° (crystallized, from 1:7 Et2O-MeOH containing some hydroquinone by chilling several days in the dark), with XIX gives a mixture (XXVIII) of 1-phenyl-8-( $\alpha$ -naphthyl)-8,13-epoxy- 7a,8,13,13a-tetrahydrobenzo[a]naphthacene-7,14-dione and the 8-phenyl-13-( $\alpha$ -naphthyl) isomer which cannot be separated by fractional crystallization XXVIII treated with HOAc saturated with HBr gives a mixture (XXIX) of 13-phenyl-8-( $\alpha$ -naphthyl)benzo[a]naphthacene-7,14-dione and the 8-phenyl-13-( $\alpha$ -naphthyl) isomer, which cannot be separated To 2.6 g. XXIX is added 3 equivs. PhLi in Et2O (ice bath), the product hydrolyzed after 1 h., and petr. ether added to the evaporated organic layer, giving 2.3 g. 7,13,14-triphenyl-8-( $\alpha$ -naphthyl)-7,14-dihydroxy-7,14-dihydrobenzo[a]naphthacene (XXX) and the 7,8-14-triphenyl-13-( $\alpha$ -naphthyl)isomer (XXXI). XXX and XXXI are separated by chromatog. on Al2O3 (activated by heating at 175°). Two fluorescent bands appear under UV light; the lower band XXXI is eluted with 1:1 cyclohexane-CCl4 and the upper band XXX with CCl4, and each band chromatographed again. XXXI, crystallized from petr. ether (b. 30-60°), then Et2O, gives 10% white crystals with 0.5 mol. Et2O, m. 316-18° (decomposition). XXX, with 0.5 mol. Et2O, m. 253-5° (decomposition), is similarly obtained in 50% yield. XXX (0.5 g.) reduced with TiCl3 gives 0.025 g. III, m. 256-7°. Similarly, XXXI gives 40% 13-( $\alpha$ -naphthyl)-7,8,14-triphenylbenzo[a]naphthacene, double m.p. 315-17° and 320°, sublimes 323-4°. Since the  $\alpha$ -naphthyl group in the benzo[a]naphthacene obtained from I can only be in the 8-position, the hydrocarbon from XXX must be the 8-( $\alpha$ -naphthyl) compound, as it is identical with 1 of the isomers from I. Thus, 2 of the 3 possible isomers obtained by dimerizing I having been synthesized, assignment of the structures for all 3 is possible.

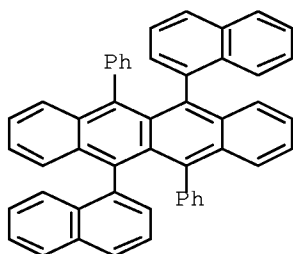
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Benzo[a]naphthacene, 13-(1-naphthyl)-7,8,14-triphenyl-  
679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
RL: PREP (Preparation)  
(preparation of)
- IT 672304-72-2P, Benzo[a]naphthacene,  
8-(1-naphthyl)-7,13,14-triphenyl- 672305-30-5P,  
Benzo[a]naphthacene, 13-(1-naphthyl)-7,8,14-triphenyl-  
679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
RL: PREP (Preparation)  
(preparation of)
- RN 672304-72-2 HCAPLUS
- CN Pentaphene, 8-(1-naphthalenyl)-7,13,14-triphenyl- (CA INDEX NAME)



RN 672305-30-5 HCAPLUS  
CN Pentaphene, 13-(1-naphthalenyl)-7,8,14-triphenyl- (CA INDEX NAME)

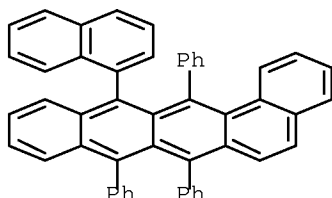


RN 679396-84-0 HCAPLUS  
CN Naphthacene, 5,11-di-1-naphthalenyl-6,12-diphenyl- (CA INDEX NAME)



L6 ANSWER 57 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
AN 1952:66982 HCAPLUS Full-text  
DN 46:66982  
OREF 46:11170e-g  
TI Two angular naphthylbenzorubrenes:  
9,11,12-triphenyl-10-(1-naphthyl)benzo-1,2-naphthacene and  
10,11,12-triphenyl-9-(1-naphthyl)benzo-1,2-naphthacene  
AU Bertin, Daniel  
SO Compt. rend. (1952), 234, 222-4  
DT Journal  
LA Unavailable  
AB That the 2nd isomer of an earlier rubrenic synthesis (Dufraisse, Robin, and Bertin, C.A. 44, 1471b) has the structure 9,11,12-triphenyl-10-(1-naphthyl)benzo-1,2-naphthacene (I) is confirmed by diene synthesis. I and the 10,11,12-triphenyl-9-(1-naphthyl) isomer (II) are prepared Condensation of 1-(1-naphthyl)-3-phenylisobenzofuran with 1,4-phenanthrenequinone gives 9-phenyl-10-(1-naphthyl)- and 9-(1-naphthyl)-10-phenyl-benzo-1,2-naphthacene-11,12-dione 9,10-epoxide, which on dehydration with HBr-AcOH give an inseparable mixture of 9-phenyl-10-(1-naphthyl)- and 9-(1-naphthyl)-10-phenyl-benzo-1,2-naphthacene-11,12-dione. Treatment with PhLi and chromatographic separation gives the 2 diols, 9,11,12-triphenyl-10-(1-naphthyl)- and 10,11,12-triphenyl-9-(1-naphthyl)-11,12-dihydro - 11,12-dihydroxybenzo - 1,2 - naphthacene, as crystals containing 0.5 Et2O, m. 253-5° (III) and 316-18° (IV), resp. Reduction with TiCl3 of III yields I, m. 256-7°, and of IV gives II, m. 323-4° (sublimed under high vacuum).  
IT 672305-30-5P, Benzo[a]naphthacene,

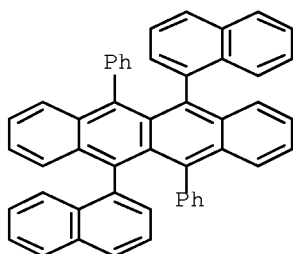
13-(1-naphthyl)-7,8,14-triphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 672305-30-5P, Benzo[a]naphthacene,  
 13-(1-naphthyl)-7,8,14-triphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 672305-30-5 HCAPLUS  
 CN Pentaphene, 13-(1-naphthalenyl)-7,8,14-triphenyl- (CA INDEX NAME)



L6 ANSWER 58 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1950:38107 HCAPLUS Full-text  
 DN 44:38107  
 OREF 44:7302f-i,7303a-e  
 TI Synthesis in the phenanthrene series. XI. 1-Methyl-8-isopropylphenanthrene  
 AU Short, W. F.; Wang, H.  
 CS Boots Pure Drug Co. Ltd., Nottingham, UK  
 SO Journal of the Chemical Society (1950) 991-4  
 CODEN: JCSOA9; ISSN: 0368-1769  
 DT Journal  
 LA Unavailable  
 AB cf. C.A. 33, 6299.1. 1-BrC<sub>10</sub>H<sub>6</sub>MgBr (from 15 g. bromide), treated with 6 g. Me<sub>2</sub>CO, 15 cc. ether, and 6 cc. C<sub>6</sub>H<sub>6</sub> and boiled 1 h., gives 73% 1-bromo-6-isopropenylnaphthalene, b<sub>3</sub> 160-5°; it does not give an adduct with maleic anhydride. 1-C<sub>10</sub>H<sub>7</sub>NO<sub>2</sub> (86.5 g.), 37.5 g. (HCHO)<sub>3</sub>, 37.5 g. ZnCl<sub>2</sub>, and 15 g. concentrated HCl, stirred 20 h. at 65-70° while treated with HCl, give 54% 5,1-O<sub>2</sub>NC<sub>10</sub>H<sub>6</sub>CH<sub>2</sub>Cl (I), m. 96-8°; I and 1.8 mols. 2 N Na<sub>2</sub>CO<sub>3</sub>, refluxed 48 h., give 65% 5-nitro-1-(hydroxymethyl)naphthalene (II), m. 128-9° (Ac derivative, m. 90°, 67%). Oxidation of II with CrO<sub>3</sub> in hot AcOH gives 21% 5,1-O<sub>2</sub>NC<sub>10</sub>H<sub>6</sub>CO<sub>2</sub>H (III) and 27% 5,1-O<sub>2</sub>NC<sub>10</sub>H<sub>6</sub>CHO; alkaline KMnO<sub>4</sub> gives 21% III and 44% II. Reduction of III with Fe(OH)<sub>2</sub> gives 87% 5-amino-1-naphthoic acid, orange, m. 201-2° [HCl salt, orange, m. 278-80° (decomposition)]; this could not be converted into 5,1-BrC<sub>10</sub>H<sub>6</sub>CO<sub>2</sub>H (IV), which was obtained in 56% yield from 1-C<sub>10</sub>H<sub>7</sub>CO<sub>2</sub>H (preparation given in 87% yield from 1-C<sub>10</sub>H<sub>7</sub>Ac) and Br in AcOH on the steam bath. Me ester (V) of IV, b<sub>3.5</sub> 170-5°, b<sub>215</sub> 268-74°, m. 66.7°, 49%; the K salt of IV and Me<sub>2</sub>SO<sub>4</sub> give 62.5° V. V (265 g.) in 1200 cc. ether, added (1.5 h.) to 2.4 mols. MeMgI, stirred overnight at room temperature, and boiled 1 h., gives 54% 1-bromo-5-isopropenylnaphthalene (VI), b<sub>2</sub> 138-40° (picrate, yellow, m. 94-5°). VI (175 g.) in 700 cc. ether, added (4 h.) to an ice-cold stirred suspension of Mg in EtMgBr (36 g. Mg, 52.5 cc. EtBr, and 440 cc. ether), stirred overnight and refluxed 1 h., cooled to 0°, treated (3 h.) with 520 cc. 25% (C<sub>2</sub>H<sub>4</sub>)<sub>2</sub>O in C<sub>6</sub>H<sub>6</sub>, refluxed 1 h., the ether removed, and the product decomposed with ice-cold dilute HCl, gives 74% 2-(5-isopropenyl-1-naphthyl)ethanol (VII), b<sub>1</sub> 153-4° (4-biphenyllylcarbamate, m. 147-8°); a fraction (b<sub>2</sub> 165-220°) yields some 5,5'-diisopropenyl-1,1'-binaphthyl (?), m. 183-4°. VII (75 g.) in 750 cc. MeOH, shaken 5 h. with H

and 30 g. 1.2% Pd-SrCO<sub>3</sub>, gives 74% 2-(5-isopropyl-1-naphthyl)ethanol, b1.5 158-64°, m. 63-4° (4-biphenyllylcarbamate, m. 161°; acetate, b1 164-6°, m. 33-4°); PBr<sub>3</sub> gives 50.5% of the bromide (VIII), b0.2 131-5°, m. 41-2°. The Na derivative from 81 g. CH<sub>2</sub>(CO<sub>2</sub>Et)<sub>2</sub> and 7 g. Na in 100 cc. MeOH (prepared in 130 cc. xylene), largely freed from solvent, treated with 70 g. VIII in 115 cc. xylene, slowly heated to 140-50°, then heated 16 h. at that temperature, and the ester (59%) hydrolyzed with KOH, gives 86% 2-(5-isopropyl-1-naphthyl)ethylmalonic acid (IX), m. 151-2° (decomposition); IX; heated 2 h. at 155-65°, gives 91% 5-isopropyl-1-naphthalenebutyric acid (X), m. 120-1°. X (10 g.), 50 g. P<sub>2</sub>O<sub>5</sub>, and 150 cc. C<sub>6</sub>H<sub>5</sub>, refluxed 3 h., give 36% 1-keto-8-isopropyl-1,2,3,4-tetrahydrophenanthrene (XI), m. 86-7° [semicarbazone, m. 246-7° (decomposition)]; the yield of XI from X and SnCl<sub>2</sub> is 60%. XI (5 g.) in 70 cc. ether, added to MeMgI (1.5 g. Mg) and boiled 3 h., gives 67% 1-methyl-8-isopropyl-3,4-dihydrophenanthrene (XII), m. 72-3°. XII (1.5 g.) and 1.57 g. chloranil in 7 cc. xylene, refluxed 20 h., give 61% 1-methyl-8-isopropylphenanthrene (XIII), m. 100.5-1° (picrate, orange-yellow, m. 142,-2.5°; styphnate, yellow, m. 152.5-3°). Oxidation of XIII with CrO<sub>3</sub> in AcOH gives 1-methyl-8-isopropyl-9,10-phenanthrenequinone, orange, m. 163.5-4°, which yields 1'-methyl-4''-isopropyl-1,2,3,4-dibenzophenazine, pale yellow, m. 153.5-4°. XIII is identical with the hydrocarbon obtained by the dehydrogenation of totarane (S. and Stromberg, C.A. 31, 4318.4).

IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 679396-84-0 HCAPLUS  
 CN Naphthacene, 5,11-di-1-naphthalenyl-6,12-diphenyl- (CA INDEX NAME)



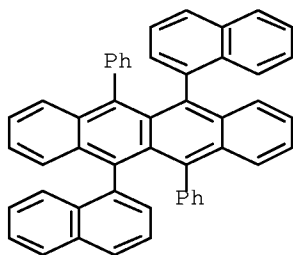
OSC.G 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

L6 ANSWER 59 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1950:38106 HCAPLUS Full-text  
 DN 44:38106  
 OREF 44:7302e-f  
 TI Rubrene reaction from naphthalenic compounds  
 AU Bertin, Daniel  
 SO Compt. rend. (1950), 230, 1356-8  
 DT Journal  
 LA Unavailable  
 AB A resinous, noncryst. form of 1-C<sub>10</sub>H<sub>7</sub>C.tplbond.CC(OH)Ph<sub>2</sub> (I) was prepared by condensing 1-C<sub>10</sub>H<sub>7</sub>C.tplbond.CLi with Ph<sub>2</sub>CO. 1-C<sub>10</sub>H<sub>7</sub>C.tplbond.CCClPh<sub>2</sub> (II) was prepared from crude I in petr. ether with PCl<sub>3</sub>, I.HCl, m. 103-4°. 1-C<sub>10</sub>H<sub>7</sub>COCH:CPh<sub>2</sub> (III) prepared from I in alc. containing 10% H<sub>2</sub>SO<sub>4</sub>, pale yellow



needles, m. 109-10°. II, in alc. only, was converted to III. The naphthacene, m. 301-2°, previously reported (Dufraisse, et al., C.A. 44, 1471a) was formed by the rubrene reaction from II and a trace of quinoline by heating slowly from 140° to 215°. Confirmation was also obtained for the structures of the other naphthacenes previously reported by Dufraisse, et al.

IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 679396-84-0 HCAPLUS  
 CN Naphthacene, 5,11-di-1-naphthalenyl-6,12-diphenyl- (CA INDEX NAME)



L6 ANSWER 60 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1950:7534 HCAPLUS [Full-text](#)

DN 44:7534

OREF 44:1471c-e

TI Action of Grignard solutions. III. Action of Grignard solutions on naphthosultone and its substituted derivatives

AU Mustafa, Ahmed

CS Fouad I Univ., Abbassia, Cairo, Egypt

SO Journal of the Chemical Society (1949) 2151-2

CODEN: JCSOA9; ISSN: 0368-1769

DT Journal

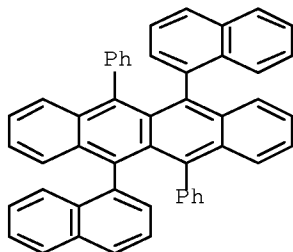
LA Unavailable

OS CASREACT 44:7534

AB cf. C.A. 43, 7006d; 44, 592e. Naphthosultone (I) (3.5 g.) in 50 cc. C<sub>6</sub>H<sub>6</sub>, added to tert-BuMgBr (14 g. tert-BuBr) in 40 cc. ether, refluxed 4 hrs., kept overnight, and decomposed with cold dilute HCl, gives about 75% 8-tert-butylsulfonyl-1-naphthol, m. 240° [CH<sub>2</sub>N<sub>2</sub> (24 hrs. at 0°) gives the Me ether, m. 205-6°]; Me homolog, m. 150° (Me ether, m. 138-9°); Et homolog, m. 210° (Me ether, m. 146°). The 4-Me derivative of I gives 8-methylsulfonyl-4-methyl-1-naphthol, m. 155° (Me ether, m. 125°); Et homolog, m. 158° (Me ether, m. 126°); Ph analog, m. 170° (Me ether, m. 147°); 1-naphthyl analog, m. 180° (Me ether, m. 133°). 8-tert-Butylsulfonyl-4-phenylsulfonyl-1-naphthol, m. 148-9°; Ph analog, m. 282°; p-tolyl analog, m. 237-8°; 1-naphthyl analog, m. 218° (Me ether, m. 148°). 8-Methylsulfonyl-4-p-tolylsulfonyl-1-naphthol, m. 146° (Me ether, m. 96°); 8-phenylsulfonyl analog, m. 260° (Me ether, m. 205°); 8-p-tolylsulfonyl analog, m. 247-8° (Me ether, m. 232-3°).

IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)

IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 679396-84-0 HCAPLUS  
 CN Naphthacene, 5,11-di-1-naphthalenyl-6,12-diphenyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L6 ANSWER 61 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1950:7533 HCAPLUS Full-text

DN 44:7533

OREF 44:1471a-c

TI Rubrene reaction from naphthalenic compounds: angular benzologs of rubrene

AU Dufraisse, Charles; Robin, Joseph; Bertin, Daniel

SO Compt. rend. (1949), 229, 5-7

DT Journal

LA Unavailable

AB The rubrene reaction for the synthesis of naphthacenes by the dimerization of  $\text{Ph}_2\text{CClC.tplbond.CPh}$  and the loss of  $\text{HCl}$  does not occur with (1- or 2-  $\text{C}_{10}\text{H}_7$ ) $2\text{CClC.tplbond.CPh}$  but does with  $\text{Ph}(1\text{-C}_{10}\text{H}_7)\text{CClC.tplbond.CPh}$  (I). I is mixed intimately with 10-15 parts dry  $\text{NaHCO}_3$ , heated with stirring at  $70^\circ$  4 hrs., at  $80^\circ$  6 hrs., and at  $100^\circ$  2 hrs. Chromatographic analysis on  $\text{Al}_2\text{O}_3$  of the product in hexane solution gives 3 isomers,  $\text{C}_{50}\text{H}_{32}$ , in the ratio 1:0.3:0.2, m.  $301\text{-}2^\circ$ , red, and therefore the simple rubrene; m.  $257\text{-}8^\circ$ , orange, the monobenzorubrene; and m.  $323\text{-}4^\circ$ , yellow, the dibenzorubrene.

IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-

RL: PREP (Preparation)

(preparation of)

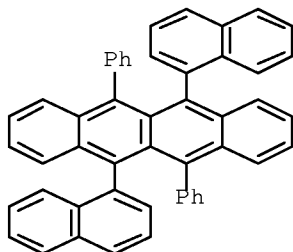
IT 679396-84-0P, Naphthacene, 5,11-di-1-naphthyl-6,12-diphenyl-

RL: PREP (Preparation)

(preparation of)

RN 679396-84-0 HCAPLUS

CN Naphthacene, 5,11-di-1-naphthalenyl-6,12-diphenyl- (CA INDEX NAME)



L6 ANSWER 62 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 1945:20719 HCAPLUS Full-text

DN 39:20719

OREF 39:3278i,3279a-c

TI Anthracene series. II. The action of Grignard reagents on dianthraquinone.  
New derivatives of 9,9'-dianthranyl

AU Schonberg, Alexander; Ismail, Abdel Fattah Aly

SO Journal of the Chemical Society (1945) 201-2

CODEN: JCSOA9; ISSN: 0368-1769

DT Journal

LA Unavailable

AB cf. C.A. 38, 5818.1. The name dianthranene is proposed for the ring system  $\text{H}_2\text{C}_{10}(\text{C}_6\text{H}_4)_2\text{C}_9:\text{C}_9'(\text{C}_6\text{H}_4)_2\text{C}_{10}'\text{H}_2$ . Dianthraquinone (4 g.) and  $\text{PhMgBr}$  (from 7.2 g.  $\text{PhBr}$ ) in 25 cc. ether and 50 cc.  $\text{C}_6\text{H}_6$ , refluxed 4 hrs. and decomposed with aqueous  $\text{NH}_4\text{Cl}$ , give 3.6 g. of 10,10'-dihydroxy-10,10'-diphenyldianthranene (I), m. above  $300^\circ$  (decomposition); concentrated  $\text{H}_2\text{SO}_4$  gives a blue-green solution I (0.5 g.) in 50 cc.  $\text{AcOH}$  and 1 cc.  $\text{Ac}_2\text{O}$ , refluxed 2 hrs., gives 0.35 g. of 10,10'-diphenyl-9,9'-dianthranyl (II), pale yellow; II results in 0.2-g. yield by heating 1 g. of I in vacuo in a boiling  $\text{Hg}$  bath for 2 hrs. The 10,10'-bis(o-chlorophenyl) analog of I m. above  $300^\circ$  (decomposition); concentrated  $\text{H}_2\text{SO}_4$  gives a deep blue-green color; the analog of II, yellow, m. above  $300^\circ$ ; it shows a deep green fluorescence in ultraviolet light; solns. in  $\text{C}_6\text{H}_6$  or  $\text{PhMe}$  showed a blue fluorescence. The di(1-naphthyl) analog of I could not be purified but was converted into the analog of II, yellow, m. above  $300^\circ$ ; it shows a bright green fluorescence in the ultraviolet. The 10,10'-dibenzyl analog of I, pale yellow, m. above  $300^\circ$  (decomposition); it gives a bright green color with concentrated  $\text{H}_2\text{SO}_4$ ; with  $\text{AcOH}-\text{Ac}_2\text{O}$  this yields 10,10'-dibenzylidene-9,9'-dianthranene, yellow, darkens (decomps. ?) at about  $230^\circ$ .

IT 23102-67-2P, 9,9'-Bianthranyl, 10,10'-diphenyl-  
855266-69-2P, 9,9'-Bianthranyl, 10,10'-bis(o-chlorophenyl)-

RL: PREP (Preparation)

(preparation of)

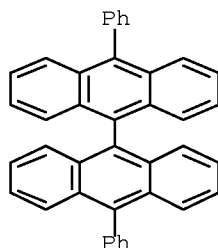
IT 23102-67-2P, 9,9'-Bianthranyl, 10,10'-diphenyl-  
855266-69-2P, 9,9'-Bianthranyl, 10,10'-bis(o-chlorophenyl)-

RL: PREP (Preparation)

(preparation of)

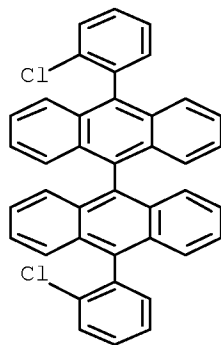
RN 23102-67-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)

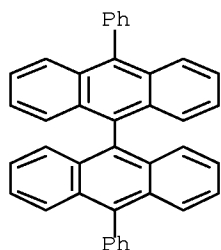


RN 855266-69-2 HCAPLUS

CN 9,9'-Bianthracene, 10,10'-bis(2-chlorophenyl)- (CA INDEX NAME)

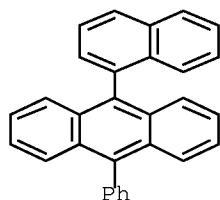


L6 ANSWER 63 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1938:44196 HCAPLUS Full-text  
 DN 32:44196  
 OREF 32:6158b-c  
 TI Photooxidation in the meso-bianthranyl series  
 AU Dufraisse, Charles; Velluz, Leon; Leon, Mme.  
 SO Bulletin de la Societe Chimique de France, Memoires (1938), 5,  
 600-10  
 CODEN: BSCMAF; ISSN: 0366-3132  
 DT Journal  
 LA Unavailable  
 AB 10,10'-Diphenyl-9,9'-bianthranyl and 9,9'-bianthranyl undergo no  
 photooxidation under illumination with sunlight in a variety of solvents. The  
 same passivity with regard to the diene synthesis also holds. These facts  
 suggest that the action of light is not simply a liberation of valences of the  
 bi-radical.  
 IT 23102-67-2, 9,9'-Bianthranyl, 10,10'-diphenyl-  
 (photooxidation of)  
 IT 23102-67-2, 9,9'-Bianthranyl, 10,10'-diphenyl-  
 (photooxidation of)  
 RN 23102-67-2 HCAPLUS  
 CN 9,9'-Bianthracene, 10,10'-diphenyl- (CA INDEX NAME)



L6 ANSWER 64 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1927:26314 HCAPLUS Full-text  
 DN 21:26314  
 OREF 21:3191f-i

TI Synthesis of meso-alkyl and meso-aryl anthracene derivatives. II  
 AU de Barry Barnett, E.; Cook, J. W.; Wiltshire, J. L.  
 SO Journal of the Chemical Society (1927) 1724-32  
 CODEN: JCSOA9; ISSN: 0368-1769  
 DT Journal  
 LA Unavailable  
 AB cf. C. A. 21, 1647. C<sub>14</sub>H<sub>8</sub>O<sub>2</sub> and PhMgBr give 50% of 9,10-diphenyl-9,10-dihydroanthraquinol, m. 260-3°; anthraquinol was also formed; in another experiment, 9,10-diphenylanthracene was isolated. The 9,10-di-p-anisyl derivative was similarly prepared; heating with HI and P at 150° gave 9,10-dihydroanthracene.  
 1-Chloro-9,10-diphenylanthracene, yellow, m. 185°, from 1-ClC<sub>14</sub>H<sub>7</sub>O<sub>2</sub> and 4 mols. PhMgBr by boiling 4 hrs. 1,5-Dichloro-9,10- diphenyl-9,10-dihydroanthraquinol, m. 320° concentrated H<sub>2</sub>SO<sub>4</sub> gives an indigo-blue solution; passing dry HCl into a tetralin solution gives the 1,5,9,10-tetrachloro derivative, m. 250°. Anthrone and PhCH<sub>2</sub>MgCl give a compound, m. 50°, which passes into 9-benzylanthracene on standing overnight. The following derivs. of phenyldihydroanthranol were prepared from 9-phenylanthrone and the proper Grignard reagent; 10- $\alpha$ -Pr, m. 148- 50°; benzyl. m. 177°;  $\alpha$ -C<sub>10</sub>H<sub>7</sub>, m. 260-2°; in most cases the phenylanthracene derivative was obtained; Et, m. 110°;  $\alpha$ -Pr, m. 115-6°;  $\beta$ -Pr, m. 166-7°;  $\alpha$ -Bu, m. 156°; iso-Am, m. 203-4°; benzyl, m. 155°;  $\alpha$ -C<sub>10</sub>H<sub>7</sub>, m. 244-5. 1,5-Dichloro-9-phenyl-10-methylene- 9,10-dihydroanthracene, m. 150°; 10-ethylidene derivative, m. 159°; 10-propylidene derivative, m. 135°; in another experiment, there was isolated a very small amount of a compound, probably 1,5-dichloro-9-phenyl-10-propylanthracene, m. 196°; the corresponding isopropyl derivative, m. 195°. 1,5-Dichloro-9-phenyl-10-benzyl-9,10-dihydroanthranol, m. 173°; evaporation of an Et<sub>2</sub>O solution gives 1,5-dichloro-9-phenyl-10-benzylanthracene, yellow, m. 209°. 1,5-Dichloro-9,10-diphenyl-9,10- dihydroanthranol, m. 201° (decomposition); 1,5-dichloro-9,10- diphenylanthracene, m. 236°.  
 IT 63018-93-9P, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 IT 63018-93-9P, Anthracene, 9-(1-naphthyl)-10-phenyl-  
 RL: PREP (Preparation)  
 (preparation of)  
 RN 63018-93-9 HCAPLUS  
 CN Anthracene, 9-(1-naphthalenyl)-10-phenyl- (CA INDEX NAME)



L6 ANSWER 65 OF 65 HCAPLUS COPYRIGHT 2010 ACS on STN  
 AN 1924:1696 HCAPLUS Full-text  
 DN 18:1696  
 OREF 18:257b-f  
 TI Anthracene series. VII  
 AU de B. Barnett, E.; Cook, J. W.  
 SO Journal of the Chemical Society, Transactions (1923), 123,

2631-42

CODEN: JCHTA3; ISSN: 0368-1645

DT Journal

LA Unavailable

AB Evidence is presented to show that in the C<sub>14</sub>H<sub>10</sub> series nitration in the meso-position consists in the 1st place in addition of HNO<sub>3</sub> to the "bridge" bond and subsequent loss of H<sub>2</sub>O or alc., this loss taking place with reestablishment of the "bridge" when this is possible, or from the gem-di-HO group when reestablishment of the "bridge" is not possible. 9-Phenylanthrone can be conveniently prepared from the 9-Br derivative and C<sub>6</sub>H<sub>6</sub> by the addition of AlCl<sub>3</sub>. Phenylanthranlyl methyl ether (I), pale yellow, m. 161-3°, results from phenylanthrone and p-MeC<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>Me in alc. KOH; its solns. exhibit a powerful violet fluorescence. It is demethylated by heating 2 hrs. with glacial AcOH containing a little HCl. Phenylanthronylpyridinium bromide, m. 101-2° to red liquid, quickly hydrolyzed in H<sub>2</sub>O to phenylhydroxyanthrone (II). 9-Nitro-10-phenylanthracene, yellow, rapidly becoming red on exposure to the light. Reduction of phenylanthrone by Zn and HCl gives diphenyldianthranyl, yellow, does not m. 300°; its solns. exhibit an intense violet fluorescence. It differs from dianthranyl by not forming an addition compound with PhMe. Tolyanthranlyl acetate, yellow, m. 163-4°. Nitration was carried out by suspending the powdered substance in glacial AcOH and adding HNO<sub>3</sub> slowly from a buret. Anthranlyl acetate gives nitroanthrone, this being the best method for its preparation. Methylanthranyl Me ether gives methylnitroanthrone, whose solns. in concentrated H<sub>2</sub>SO<sub>4</sub> are emerald-green and turn red on addition of a drop of HNO<sub>3</sub>. The AcOH solution liberates I from KI. Saponification of the Me ether by H<sub>2</sub>SO<sub>4</sub> in AcOH gives methylanthrone, which does not yield the characteristic NO<sub>2</sub> derivative with HNO<sub>3</sub>. Phenylanthranlyl acetate and HNO<sub>3</sub> give II and phenylnitroanthrone, the latter being also obtained from I and NH<sub>3</sub>; it m. 115-6°, and gives a blood-red solution in concentrated H<sub>2</sub>SO<sub>4</sub>, which color is not altered by the addition of HNO<sub>3</sub>. Boiled with dilute H<sub>2</sub>SO<sub>4</sub> or glacial AcOH, N oxides are evolved and II is produced. In no case reported above could the intermediate additive compound be isolated.

IT 23102-67-2P, 9,9'-Bianthranyl, 10,10'-diphenyl-

RL: PREP (Preparation)

(preparation of)

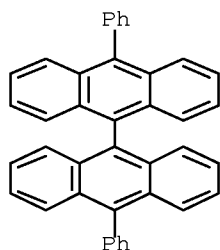
IT 23102-67-2P, 9,9'-Bianthranyl, 10,10'-diphenyl-

RL: PREP (Preparation)

(preparation of)

RN 23102-67-2 HCAPLUS

CN 9,9'-Bianthrane, 10,10'-diphenyl- (CA INDEX NAME)



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SESSION WILL BE HELD FOR 120 MINUTES  
STN INTERNATIONAL SESSION SUSPENDED AT 13:45:40 ON 27 JUN 2010